

STUDY ON STATUS AND CONSTRAINTS OF GOAT REARING IN AND AROUND OF RANCHI DISTRICT



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EXTENSION EDUCATION**

Faculty of Veterinary Science & Animal Husbandry

**BIRSA AGRICULTURAL UNIVERSITY
RANCHI - 834006
(JHARKHAND)
2014**

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**STUDY ON STATUS AND CONSTRAINTS OF GOAT
REARING IN AND AROUND OF RANCHI DISTRICT**

Thesis

Submitted to the

BIRSA AGRICULTURAL UNIVERSITY

RANCHI, JHARKHAND



BY

DR. NEHA KUMARI

Reg. No. V/BAU/3414/2005

**IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE DEGREE OF**

Master of Veterinary Science

IN

**VETERINARY & ANIMAL HUSBANDRY EXTENSION
EDUCATION**

2014

Dedicated

To

My

PARI

Certificate of the Major advisor and endorsement of the Head of the Department

DEPARTMENT OF VETERINARY & ANIMAL HUSBANDRY
EXTENSION EDUCATION
FACULTY OF VETERINARY SCIENCE & ANIMAL HUSBANDRY,
BIRSA AGRICULTURAL UNIVERSITY,
RANCHI-834006



CERTIFICATE

This is to certify that the thesis entitled "**Study on status and constraints of goat rearing in and around of Ranchi district**" submitted in partial fulfilment of the requirements for the **Degree of Master of Veterinary Science (Veterinary & Animal Husbandry Extension Education)** of the Faculty of Post-Graduate Studies, Birsa Agricultural University, Ranchi (Jharkhand) is the record of bonafide research carried out by **Dr. Neha Kumari** under my supervision and guidance. No part of the thesis has been submitted for any other degree or diploma.

It is further certified that such help or information received during the course of this investigation and preparation of the thesis have been duly acknowledged.

Endorsed :

(J. Oraon)
Major Advisor
Chairman/Head of the Department

Certificate of the Advisory Committee Members

CERTIFICATE

We, the undersigned, members of the Advisory Committee of ***Dr. Neha Kumari*** , a candidate for the **Degree of Master of Veterinary Science** with major in **Veterinary & Animal Husbandry Extension Education** have gone through the manuscript of the thesis and agree that the thesis entitled " **Study on status and constraints of goat rearing in and around of Ranchi district** " may be submitted by ***Dr. Neha Kumari*** in partial fulfilment of the requirements for the degree.

(J. Oraon)

Chairman of the Advisory
committee

Members of the Advisory Committee

1. *(Sushil Prasad)*

2. *(L. B. Singh)*

Certificate of approval by the Chairman of the Advisory Committee and External Examiner

CERTIFICATE

*This is to certify that the thesis entitled " **STUDY ON STATUS AND CONSTRAINTS OF GOAT REARING IN AND AROUND OF RANCHI DISTRICT**" submitted by **Dr. Neha Kumari** in partial fulfilment of the requirements for the **Degree of Master of Veterinary Science (Veterinary & Animal Husbandry Extension Education)** of the Faculty of Post-Graduate approved on.....*

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Date:

Place: Ranchi

(Neha Kumari)

ABSTRACT

In Jharkhand the rural families are dependent on natural resources like land, water, livestock and forests for generating employment and for their livelihood. Among the livestock, goats play a significant role and are well distributed among landless and marginal land holders.

Keeping in view the importance of goat in the economic upliftment of poor farmers of Jharkhand state and particularly in Ranchi district, the present study is planned to have an exhaustive study of the existing goat farming practice of goat farmer of Ranchi district and also to fill the gap between the existing practices and the recommendation scientific practices.

OBJECTIVES:

1. To study the socio-personal and socio-economic characteristics of respondent.
2. To study the existing goat farming practices of goat farmer viz. breeding, feeding, management & disease control.
3. To study the knowledge level of farmers about improved goat farming practices.
4. To study the adoption of improved goat farming practices.
5. To study the relationship between socio-personal and socio-economic variables with adoption & knowledge by the respondent.
6. Constraints experienced by farmers in goat farming.

Out of the 24 blocks of Ranchi district, three blocks namely, Kanke, Ormanjhi, and Ratu were selected randomly for the study.

Five villages were selected at random from each block. Thus a total of 15 villages were selected for the study which are Hoher, Boreya, Murum, Batta, Kumharia, Kuchu, Kulhi, Gangutola, Dahubartoli, Khanga, Amtard, Kathitard, Jhakhartoli, Hurhuripetha and Makhundro.

10 farmers having at least two or more goat from each village were selected randomly. Thus 50 farmers each from one block were selected and finally a total of 150 farmers were selected randomly for the present study. The data was collected on the pre-structured interview schedule by personal interview method from all the selected respondents.

The collected data were tabulated and analyzed by using appropriate statistical tools.

SALIENT FINDINGS

1. Majority of the goat owners were middle aged (53%), female (58.67%), belonging to general category (50.67%), illiterate (57.33%), having nuclear type (72.67%) and possessing small sized family (66%). Most of them has no social participation (60.67%) & extension contact (69.33%). Most of them has low level of mass media exposure (88.67%) and training orientation (84.67%).
2. With regard to economic characteristics, majority of them having marginal landholding (54.67) having labour as primary (62%) & livestock rearing as secondary occupation (68%) with small herd size and medium economic status with monthly family income Rs. 1406.
3. Most of the respondent mated their doe with local buck & opined winter as best season for kidding. Majority of them can identify goat in heat.

4. All respondent let loose their goat for grazing. 36.67% respondents were feeding tree leaves & 96% respondents were not feeding concentrate mixture. All of them were feeding colostrums to new born kids & allowing kids for grazing at the age of 2-3 month.
5. Most of the respondents treat their animals by self indigenously (44.67%). 12% of the respondents were vaccinating their goat. For control of ecto-parasites gandhak heated in karanj oil were used by 60.67% respondents.
6. Most of them were not cleaning their utensils (94.67%). Castration of male kid was followed all by indigenous method at the age of about 2 month (75.33%). Most of them provided bedding to the kid (98%). Placenta was disposed by burying it & majority of them kept their goat in shed (90.67).
7. Level of adoption & knowledge of goat farmers about improved goat rearing practices was found to be low (94%) & medium (83.33%).
8. Different component of the existing goat rearing practices showed marked result. Majority of the respondent (80%) followed natural service with local buck as breeding method, (89.33%) followed winter as best season for kidding, only 4% had feeding concentrate mixture. Overall knowledge level of goat rearing respondents regarding improved goat rearing was found to be medium (83.33%).
9. Knowledge of improved goat farming practices was positively and significantly associated their age, education, social participation, extension contact, mass media exposure, training orientation, socio economic status, herd size, income from goat, adoption level of

- improved goat rearing practices and income from goat at 5% level of significance. However, a positive but non-significant relationship was observed with type of family and land holding. While a negative and non significant relationship was observed with size of family.
10. Adoption of improved goat farming practices was positively and significantly associated their age, education, social participation, extension contact, mass media exposure, training orientation, socio economic status, herd size, income from goat, knowledge level of improved goat rearing practices and income from goat at 5% level of significance. However, a positive but non-significant relation-ship was observed with type of family, size of family and land holding.
 11. High cost of concentrate mixture (93.33%), inadequate extension training facility (86.66%) and Poor market infrastructure & poor knowledge of marketing (72%) were major constraints perceived by goat rearing respondent in adoption of improved goat rearing practices.

IMPLICATIONS

Based on the findings of the present work, following implications could be inferred

1. Analysis of socio-personal characteristics of respondents has indicated that the education level of respondents was low. Thus, there is an urgent need to motivate the respondents to get educated and for this the voluntary organizations must come forward to educate them besides imparting vocational training keeping their cultural heritage alive.

2. Results of the study further show that extension contact was low in the study area. Therefore, there is an urgent need that the extension agencies should make regular visit to the villages for motivating about scientific goat rearing practices.
3. The results revealed that there was non-significant difference between respondents for adoption of improved goat husbandry practices could be attributed to the fact that no concerted attempt was made by the project on popularizing goat husbandry practices. So, there is an urgent need to draw attention of Policy makers, Government of Jharkhand and BAU towards the promotion of goat husbandry practices in villages.
4. Scientific line of treatment among animals should be carried out in the study area, for that more technical personnel should be appointed to cover the respective area with the necessary provision of medicines, vaccines and other inputs.
5. Economic analysis indicated that the overall average monthly income was found to be about Rs.1400. Efforts must be taken to increase the overall average monthly income of villages.

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INTRODUCTION

Goat in India has increased at a faster rate than that of other species of farm animals. In 1952, there were 47.0 million goats, which has risen now to 123.0 million (17.08 % of the world's goat population) making India number two in the world ranking and number one in goat milk production .

In India, the contribution of livestock sector to Gross Domestic Product (GDP) is rising though the contribution of agricultural sector in general is witnessing a declining trend. This indicates that India is moving towards industrialization like developed countries. The National Commission on Agriculture in India had recommended the reduction in goat population on the grounds of environmental implications of goat rearing on degradation of forest and grazing lands. The phenomenal increase in goat population despite NCA recommendations against it, clearly explain importance of goats for the rural people in India.

In such a situation, goats are going to be even more important source of livelihood for many more people in coming years, thus,

deserve greater attention both at micro and macro level. The current study being a part of a broader study on livestock production systems was undertaken mainly to appraise the role of goats for small scale farmers including the landless rural population in predominant crop-livestock mixed farming systems operating in India.

The goats are reared mainly by poorest of the poor of the developing countries. The small and marginal farmers including landless agricultural labourers, mostly in non green revolution areas where irrigation facilities are poorly developed, prominently rear goats.

In India goat farming is carried out since time immemorial. Marginal or undulating lands, unsuitable for cultivation, may be used and any inexpensive shelter will sufficient for goat rearing. In rural areas, goat farming plays a vital role to solve the problem of unemployment. The economic returns from keeping goats are high as compared to the other farming enterprises. In goat farming returns of capital is up to 50% and recoveries of 70% of the retail price are possible.

Goats have been described as poor man's cow because of their immense contribution to the poor people's economy. For poor and landless or marginal farmers, they do not only supply nutritious and easily digestible milk to their babies but also serve as a regular source of additional income. Being small sized animal the goat can easily be managed by women & children.

Feeding, milking and care of goats does not require much equipments & handwork. Livestock capital and cost of feeding is also low. It is very economical to rear goats as they require a small amount of fodder and little space for housing. Four goats can be maintained

as cheaply as a cow. In areas where fodder resources are limited and milch cattle do not thrive, goats can be successfully reared as they can thrive on that class of fodder on which other animals will starve to death.

Today India ranks first for its genetic resource and numerical superiority of goats in world. The world total goat population accounts 520.4 million. The goat population in country is estimated as 123 million, forming 25% of total livestock population. The current population of goat is about 24 million in Jharkhand. Comparative studies on economics of various farming systems under semi arid tract suggest that small & landless labors should adopt goat farming to get employment on regular basis.

The income from goat farming by all means accounts 5.5% of the total agricultural income. Goat's contribution in terms of meat production is better than its milk production (Dairy India 1991).

Goat farming has now assumed a key position in the rural development programme in the developing countries. But the undulating nature of terrain, highly eroded, sandy, shallow, acidic and less fertile soils, scanty and erratic rainfall, fragmentation of holding etc are in major factors limiting the agricultural development in this region, therefore the allied sector activities like animal husbandry occupy an important place in this region.

Amongst all the livestock, goat is the most preferred livestock by the tribal's & nontribal farmers of Jharkhand. It is preferred because it doesn't require too much expenditure, it's easy management, less health problem, easy availability of animals, and since it provide a regular source of income (Panday 2000).

Jharkhand is one of the most important states of India in respect to goat population. The current projected population of goat in Jharkhand is about 24 million. In Jharkhand, goats are being reared only for meat production. Due to smaller size of local Bengal goat, goat keepers don't get remunerative price but the quality of skin, meat, and prolificacy of local Bengal goat is much better than that of other breeds of the world. Keeping these points, local small sized goats were crossed with large sized bucks of Beetal, Jamunapari, and Barberi breed of our country. A large number of half breeds of above improved breeds with Beetal goats were generated under farm & village condition. On the basis of findings of last year, it has been recommended that Beetal buck should be used to improve local breed under goat improvement programmes.

Keeping in view the importance of goat in the economic upliftment of poor tribal farmers of Jharkhand state and particularly in Ranchi district, the present study is planned to have an in-depth study of existing goat farming practices of goat farmers of Ranchi district and also to fill the gap between the existing practices with the recommendation of scientific practices.

Statement of the problem:

The farmer's development will depend upon agriculture development which includes the development of livestock too. Goat farming is an effective mean of employment of rural and weaker section of society.

Keeping in view the importance of goat in the economic upliftment of poor farmers of Jharkhand state and particularly in Ranchi district, the present study is planned to have an exhaustive

study of the existing goat farming practices of goat farmer of Ranchi district and also to fill the gap between the existing practices with the recommendation of scientific practices.

OBJECTIVES:

1. To study the socio-personal and socio-economic characteristics of respondent.
2. To study the existing goat farming practices of goat farmer viz. breeding, feeding, management & disease control.
3. To study the knowledge level of farmers about improved goat farming practices.
4. To study the adoption of improved goat farming practices.
5. To study the constraints experienced by farmers in goat farming.
6. To study the relationship between socio-personal and socio-economic variables with adoption & knowledge by the respondent.

1.2. SCOPE OF THE STUDY:

1. The present investigation studies the existing system of input delivery and services of goat production and reproduction performance level of goats in three different blocks in Ranchi district of Jharkhand, which will help in assessing the status of goat farming in Jharkhand.
2. The present study will be of immense value to Govt. and other agencies who are interested in learning the mechanism of transfer of technology and disseminating technological

innovations bringing such a revolutionary change in the socio-cultural and economic conditions of the people of selected villages of Ranchi district.

3. The study will help to analyse the various inputs such as medicines, vaccines, health care facilities and services such as treatment, vaccination, castration, deworming, technical advices, etc
4. The study will also be useful to the persons directly or indirectly related to A. H. development.
5. The study also analyses the constraints that are usually experienced by goat-rearers, so that necessary modifications can be made in the implementation and execution of goat development programme.

1.3 LIMITATION OF THE STUDY:-

1. Being the student research project, the present study also suffers from the usual limitation of time, fund and other constraints. Limitation of time served as a barrier for undertaking a large sample size and to have deeper probe of the problem.
2. The goat rearer generally do not keep the records of husbandry activities, the response will be based on recall basis.
3. The present study will be based on expressed response which might not be completely free from individual biases and prejudices.

However, efforts have been made to derive maximum information within the limitations.

1.4 LAYOUT OF THESIS:

The dissertation has been divided into five chapters to cover the objectives contemplated in the study.

Chapter-I presents general introduction, objective of the study, significance of the study and limitation of the study.

Chapter-II provides review of literature.

Chapter-III gives details of methods and procedures followed in the study.

Chapter-IV deals with the results and discussion.

Chapter-V deals with summary and conclusion, drawn from the present study.

Chapter-VI presents bibliography and appendices.



REVIEW OF LITERATURE

A critical review is an integral part of any research study. Moreover, it helps a great deal to elucidate the problem for study, formulate objectives, decide upon the methodology and exemplifying the inference of the study.

Review of literature helps in knowing the previous work done, delineating the problem area, providing a basis for theoretical framework, getting an insight into methodology, suggesting operational definitions of concepts and in providing a basis for the interpretation of findings.

Literature of direct relevance to the problem under investigations was limited. However, the available literature were reviewed and presented in this chapter under following sub-heads:

- 2.1 Socio - personal characteristics
- 2.2 Socio - economic characteristics
- 2.3 Existing goat farming practices of goat farmer viz. breeding, feeding, management & disease control.
- 2.4 Adoptions level of farmers about the improved goat rearing practices and its correlation with different variables
- 2.5 Knowledge level of farmers about the improved goat rearing practices and its correlation with different variables
- 2.6 Constraints experienced by the farmers in goat rearing

2.1 socio personal characteristics:

Sex:

Bhatnagar and Singhal (1984) conducted the study in Udaipur District of Rajasthan and reported that age, caste, socio-economic status and type of family of the women participants were not significant but level of education and occupation of the women participants had positive and significant correlation with the attitude of women participants towards Integrated Child Development Services (I.C.D.S.).

Saxena (1986) conducted the study in Agra district of Uttar Pradesh and stated that education, higher income, younger age were found to be dominant factors affecting married female's attitude towards small family norms.

Age:

Srivastava (1982) reported that there was negative but non significant relationship between age of the farmers .

Singh (1989), Verma (1993), Khatik (1994), Kumar (1995), Oraon(1997),Sawant (2003), Deshmukh (2005) and Shisode *et. al.* (2009) reported that majority of respondents in their respective study area were of middle age group.

Pandey (1996) reported that there was no significant correlation between age and adoption of improved A. H. practices

Tiwari (2000) reported that majority of the pig owners (55.00%) belonged to young age group (i.e. 18-29 years), while 35.83 % pig owners were from middle age group (i.e. 30-40 years) and only about 9.17 % were above 41 years of age. The average age of the pig owners was 29.68years.

Singh (2007) found that majority of respondents belonged to middle age group and overall average age was found to be 42.65 ± 0.82 years

Mahto (2008) reported that majority of the respondents (62.00%) belonged to middle age group (31 to 50 years).

Rathod *et al.* (2011) reported that majority (55 %) of farmers were middle aged followed by young (35 %) since they played a major role in income generation for the family.

Category:

Various social scientists have studied the category of the respondents extensively. Some of the findings are as follows:

From tribal areas study, Kakoty (1980) reported that the plain tribals were the preponderate caste engaged in dairy farming followed by backward community.

Kumar (1995) in their study in Bihar found a high proportion of the respondents belonging to the backward caste community including Yadav, Kurmi, Koeri, Surhi and Teli.

Singh (2007) reported that majority (80%) of the respondents belonged to Yadav caste.

Mahto (2008) reported that majority of the respondents (60.00%) of organized pig farm was found belonging to ST category whereas in unorganized pig farm, majority of the respondents (48.00%) was found belonging to SC category.

Education:

Srivastava (1982), Pandey (1989), Pandey (1996) and Verma (2003) found low level of education among the tribal respondents.

Jagpat (1985) found that education was positively correlated with adoption.

Kumar (1995) reported that the majority of the respondents (45%) were having education upto matric level .

Jha (1997) reported that majority of the tribals were found to have medium level of family education status.

Oraon (1997) found education status (0.73%) which were very low and 55.50% respondents had no family education status.

Tiwari (2000) reported that majority of his respondents were illiterate. Out of rest (66.67%) literate respondents, equal number (21.25%) were in primary and read and write category. 19.58% respondents were educated upto middle and rest 14.59% pig owners were educated upto high school and above.

Singh (2007) reported that majority of respondents were educated (52.22%) upto middle school level.

Type and Size of Family:

Tyagi (1975), Malik and Sohal (1980) and Singh (1983) found no relationship with family size and adoption level.

According to Sachchidanand (1979) and Srivastava (1982), dominant family pattern among tribals of Bihar was nuclear type and size varied between 5 to 6 persons. Shete *et al.* (1983) reported average family size of tribal family to about 8 persons in the sample village of tribal sub plan area.

Khatik (1994) reported that majority of tribal dairy farmers had medium size family.

Pandey (1996) reported that large percentage of both tribal and non tribal (61.67 and 60.00% respectively) respondents were having medium family size with 5 to 8 family members followed 22.66 and 30.00 % of tribal and non tribal respondents respectively having large family size with more than eight family members and only 11.67 and 10.00 % of the tribal and non tribal respondents respectively fell under small family size with family members upto four. There was preponderance of the nuclear type of family in the study area, and the size of family did not go quite large.

Tiwari (2000) reported that respondents belonging to small, medium and large family size did not differ significantly in their income level from piggery enterprises.

Mahto (2008) reported that majority of the respondents (56.00%) was found belonging to large family size with 8 and above members.

Social Participation:

Bhosale and Pawar (1982) observed that social participation had significant association with adoption of improved animal husbandry practices.

Srivastava (1982) who conducted a study on tribal mundas in Khunti area of Ranchi, reported that majority of tribal mundas had low social participation.

Oraon (1989) found that majority of respondents were member of at least one organisation

Pandey (1989) observed that the majority of the respondents of model villages adopted by Birsa Agricultural University, Ranchi had higher social participation and extension contact.

Kapgate and Ingle (1990) observed that the social participation of tribal of Maharastra was very poor.

Vidyarthi (2003) in his study concluded that most of the respondents fell in low social participation group.

Extension Contact and Mass Media Exposure:

Dana (1987) found that mass media exposure and Extension contact were positively and significantly correlated with attitude of livestock owners towards A.I.

Kaushik (1988) stated that extension contact was positively and highly significantly correlated with knowledge level and adoption of scientific dairy husbandry practices.

Oraon (1989) revealed high extension contact amongst tribals of Ranchi district.

Pandey (1996) reveals that mass media exposure still had lowest penetration in his study area .

Sagar and Dohare (2000) found that correlation coefficient between Extension participation of goat farmers were positively and significantly correlated with the adoption of health care in goats by all farmers.

Verma (2003) found that there was less or no extension contact in the remote villages as compared to nearby villages indicated that the extension workers did not bother going deep interior villages. It is ironical to observe that even in the nearby villages the extension contact was quite low.

Vidyarthi (2003) found that majority of the respondents from nearby villages and remote villages have no extension contact.

Seth (2004) showed that majority of his respondents fell in low level of mass media exposure.

Jha (2012) found that in non adopted villages, majority of respondents (58%) fell in low mass media exposure .

Training orientation:

Seth (2004) reveals that only 15.63 % of respondents had taken training in dairy farming and majority of respondents 84.37 % had not taken training in dairy farming. It may be due to the fact that the

training organization are located in urban and semi urban areas and people living nearby that organization got the opportunity for training.

Singh (2007) in his study concluded that most of the respondents (94.44%) did not receive any training whereas only 5.56 % respondents had received training.

Rewani (2010) in his study concluded that most of the members (93.57%) had taken training for animal husbandry.

2.2 Socio-Economic characteristics:

Occupation:

Srivastava (1982) in a study conducted in three types of villages in Bihar, found that agriculture was the main occupation of tribal mundas followed by labour, dairy farming, service and petty business.

Prasad (1987) reported that most important source of livelihood of the tribes of chotanagpur and Santhal Parganas region was cultivation followed by agriculture, labour, forestry, fishing etc.

Pandey (1996), Kumar and Sharma (1999), Seth (2004), Shweta (2010) and Jha (2012) reported crop cultivation as the main source of livelihood for majority of respondents in rural area

Kerketta (2008) in his study concluded that majority of respondents had agriculture as primary occupation and labour and livestock rearing as secondary occupation.

Income:

Bhatia and Gangwar (1980) showed that the farms income can substantially be increased by adopting improved technology in case of both crop and livestock enterprises.

Sharma and Handa (1988) revealed that there is enough scope for augmenting income and employment in rural areas through dairying if better facilities are made available.

land holding:

Srivastava (1982) found average land holding amongst the munda tribe of chotanagpur to 5 acres.

Narayana, Murthy and Reddy (1987) from the study conducted in A.P. found that the average size of land holding to be 0.96 acres. He further reported that 31.58% of them were landless.

Kumar (1992), Mishra(1994), Seth (2004) an observed preponderance of marginal farmers possessing 2.65 to 3.61 acres of land in the adopted villages of Birsa Agricultural University, Ranchi.

Rajkamal (1993) reported that all the families of kanikkar tribe had land and majority of them possessed 1 to 2 hac. of land.

Pandey (1999) reported that land holding did not affect the adoption of improved pig rearing practices in tribal dominated chotanagpur region of Bihar.

Mahali (2004) reported that majority of the respondents were large land holding farmer in Ranchi district.

Livestock Holding:

Srivastava (1982) observed 3-6 animals per munda household, Kumar (1995) reported 2-3 milch cow per household and Mishra (1994) found 2-5 animals per tribal household in tribal area of Bihar.

Pandey (1989) in his study on adopted Village of Birsa Agricultural University, Ranchi found that 68.5 % of the respondents were having cows, 13.5 % had buffaloes, 46 % had bullocks, 63 % had calves, 80.5 % reared pigs, 35.5 % reared goats and 53.5 % reared poultry.

Oraon (1989) reported that studied tribes had marginal land holding and low socio economic status in the village. He also observed that majority of the farmers income had come from livestock and poultry.

Prasad *et al.* (1993) reported that the average flock size of small, marginal and landless farmers were 4.7, 4.2 and 3.5 respectively. In landless group flock size mainly depend on grazing.

Sagar and Dohare (2000) indicated that flock size of goat farmers was positively and significantly correlated with the adoption of health care in goats.

Herd Size:

Srivastava (1982) observed that the average herd size was 5.57, 3.19 and 2.70 respectively in the three types of villages covered under study.

Kokate and Tyagi (1983) found that highly significant relationship between herd size and knowledge.

Mahipal (1983), Mahipal and Kherde (1991) and Shirshet *et.al.* (1993) found that herd size was positively and highly significantly correlated with overall adoption of Dairy innovations.

Prasad *et.al.* (1993) observed that the average flock size of small and marginal and landless farmers were 4.7, 4.2, and 3.5 respectively.

Begum (1994) stated that adopter had relatively higher socio-economic status and bigger herd size as compared to non-adopter farm women.

Sagar and Dohare (2000) indicated that flock size of goat farmer was positively and significantly correlated with the adoption of health care in goats.

Socio economic status:

Kunzru *et al.* (1989) reported that in comparison of marginal, small, medium and large categories of livestock owners the landless had significantly lower socio economic status.

Oraon (1989) stated that tribes had low socio economic status in the village. He also observed that majority of farmers income had come from livestock and poultry.

Pandey (1989) reported that majority of the farmers in selected villages fell into low socio economic status whereas Hai (1993) and Devi (1999) observed respondent that belonging to low and medium socio economic status.

Mahipal and Kherde (1991) reported that socio economic status was found to be positively and significantly correlated with overall adoption of dairy innovation.

Vidyardhi (2003) reported that most of the goat owners were fell into category of low to medium socio economics status.

Mohan *et al.* (2008) revealed that goat has been a ready cash, increased share of income from goat to family's total income, increase profit/goat/annum, increased awareness about commercial goat farming and its advantages, increased access to goat milk for family consumption and increase in employment generation through goats reported by the selected respondents goat farmers as socio economic indicator.

2.3 Existing goat farming practices:

Devendra (1981) categorised management systems for goat rearing as (i) village system which encourages goats to remain in the vicinity of the village. (ii) Extensive systems, in which extensive grazing takes place using family labour involving mainly women and children. (iii) Semi intensive systems, in which there is usually limited grazing and stall feeding depending on availability of time labour and also feeds, and (v) Very intensive systems, in which intensive uses of cultivated forages or stall feeding.

Kaul (1991) studied the goat rearing practices in semi-arid farming systems of Mathura area. It was found that performance of goat in this area was quite satisfactory as compared to those in organized farms, considering that the expenditure incurred per goat in the village was very little.

Singh & Ram (1991) reported that in general about 85% goat breeders were landless, small and marginal farmers. They further reported that goat farming was remunerative in grazing conditions particularly where the marketing infrastructure was developed.

Hariharan & Sivarajah (1993) observed three management systems viz. herding, tethering and semi intensive during his survey in Sri Lanka and found herding to be most common system.

Naidu and Chandramauli (1995) stated that the number of market intermediary involved in the assembling and distribution of goats and sheep mainly dependent on the distance between the production centres and the place of slaughter. Due to involvement of middle men both producers and ultimate consumers were exploited. The total arrival of goat and sheep in the market were lowest in the rainy season and highest in summer.

Pandey (1996) reported that goat was the most preferred species of livestock in Chotanagpur. Goats were preferred because of its easy management and less expenditure.

Deoghare *et.al.* (1998) under took a study to evaluate the income and employment potential of Barbari goat which were adopted for improved programme by his institute & he found that the net annual income per goat was highest on small size flock as compared to medium and large size flock.

Jain *et.al.* (1998) reported that India is rich repository of sheep and goat genetic resources having 42 and 20 breeds respectively. These breeds have developed special adaptational features over the year to survive and simultaneously give sustainable production under the agro-climatic condition of their habitats.

Singh and Singh (1998) compared Black Bengal with Beetal cross under farmers management system and found that under village condition of management, all kids remain with their dams till disposal. Farmers were maintaining their goats and kids on extensive grazing, tree leaves and kitchen left over.

Pandey (2000) reported that different species of livestock were preferred by the farmers according to their need and suitability to their existing resources and their environmental conditions. Goats were most preferred species of the animals by the tribals of Jharkhand.

Deoghare (2001) observed that goat farmers transported most of their goat for sale in the market where goats were sold through commission agent. The major buyers in the market were big traders and city wholesale meat dealers. Marketing cost per goat was highest in small category and found to be Rs. 53.29 followed by medium category (Rs. 48.76) and the lowest marketing cost per goat was in large category (Rs. 46.26).

Sagar and Ojha (2001) revealed that middle men facilitated in purchase and sale of goats and appeared to save the farmers labour and time, their employment was perceived to yield less profit, to consume more time and to result in hindrances, conflicts and cheating.

2.4 Adoption of improved goat rearing practices:

Hazarika (1983), Singh (1983), Jagpat (1985), Kunzru *et al.* (1987), Pandey (1996), Sagar (1997) and Sagar and Dohare (2000)

found a positive and significant association between education and adoption of goat rearing.

Joseph (1987) reported that Extension contact and mass-media exposure of tribes were significantly and positively associated with extent of adoption of recommended farming practices.

Kaushik (1988) revealed that extension contact was positively and highly significantly correlated with knowledge level and adoption of scientific dairy husbandry practices.

Pandey (1996) reported that adoption of improved goat rearing practices by tribal goat rearers was positively and significantly correlated with their position in social category ladder, urban contact, veterinary infrastructure utilization, contact with vocational institute, income from livestock, overall family income and family educational status.

Sagar and Ojha (1998) found that higher adoption of goat production technology is depended upon the time of organization of health camps for treatment of sick goats, vaccination against contagious diseases and timely availability of veterinary care, supply of fodder tree samplings, training in goat rearing health and other aspects, provision of remunerative price for goats, easy availability of credit and arrangements for breeding bucks from CIGR at low price

Chandra *et al.* (2005) reported that the mean score of education, family, educational status, communication source and adoption of improved practices in goat keeping were significantly high among the non-tribal farmers than the tribal farmers. The study also revealed that there is a significant and positive correlation between adoption of improved practices in goat keeping with education, family

educational status and communication source. The present study also identified communication source and family educational status as key elements that directly and indirectly promote the adoption of improved practices in goat keeping by the tribal and non-tribal goat keepers respectively.

Thombre *et al.* (2010) concluded that the category wise adoption index was presented in which breeding practices for goat obtained more adoption(66.89) followed by feeding practices for newly born kid (51.81), feeding practices for goat(45.48) and health care practices(32.55).The overall adoption was 47.92.

Meena *et al.* (2011) concluded that more than half of the respondents possessed medium level of adoption. They had higher adoption about clean milk production followed by management, feeding, breeds and breeding practices. There was significant difference in adoption levels between different categories of respondents with regards to breeds and breeding, feeding and management practices of goat production technology. The overall extent of adoption was found to be highest in large flock owners followed by medium and small having mean % scores of 55.54, 45.70 and 34.80 respectively.

2.5 Knowledge level of the farmers about the improved animal husbandry practices:

Govindappa (1973) concluded that knowledge level of small farmers was low for all enterprises except dairying.

Kakoty (1975) in his study concluded that 60 % and 70 % of the respondents were not aware about feeding of green fodder and concentrate mixture respectively.

Gite (1980) observed maximum knowledge level (71.14%) in management practices as compared to other gamut of animal husbandry.

Mahipal (1983) in his study observed that knowledge level of feeding practices of large farmer was positively and significantly correlated with the adoption of feeding practices.

Nataraju and Channegowda (1986) reported that majority of dairy men had medium knowledge level regarding animal husbandry practices.

Ratanakar and Reddy (1991) found in their study that with regard to animal husbandry, majority of tribal beneficiaries of ITDP programmes and non- beneficiaries had only low level of knowledge on package of practices recommendations.

Sagar (1995) postulated that tribal had vast knowledge of indigenous flora and fauna for treating their farm animals. Tharu tribes of Nainital district of UP made good use of available herbs, herbal by products and other natural resources. For curing ailments such as mastitis, FMD, R.P., H.S., bloat, loss of appetite, displacements of shoulder etc.

Tiwari (2000) reported that majority of the (39.16%) respondents had medium level of knowledge about scientific pig rearing followed by 34.58 % with low knowledge level. Only about 26.26 % respondents had high level of knowledge about the recommended practices in scientific pig rearing.

Tiwari and Tiwari (2001) found the average knowledge score of pig owners in scientific pig rearing to be 37.05 out of total score of 66. They concluded that the Extension agencies and training institute

needs to focus their attention towards providing training to these pig owners in scientific pig rearing so as to increase their income and productivity.

Verma (2003) found that most of the respondents had medium level of knowledge about scientific pig rearing.

Mahali (2004) found that majority of the respondents had medium knowledge level of pig rearing practices, swine fever, swine pox and FMD, deworming and control of ectoparasites and feeding of pigs.

Singh (2007) reported that majority of the respondents had high knowledge level. The knowledge about scientific dairy husbandry practices was found to be highly significantly correlated with adoption at 0.05 level and with size of family, milk production, milk sale and net income from dairying at 0.01 level.

Mahto (2008) reported that most of the respondents of organized pig farm had high level of knowledge whereas most of the respondents of unorganized pig farms had medium and low level of knowledge. There was highly significant difference between respondents of organized and unorganized pig farms.

Sharma *et al.* (2009) reported that majority of the respondents of all the categories possessed moderate knowledge about buffalo husbandry management practices ranging from 55 to 60 % followed by poor and high knowledge. Higher knowledge was recorded among the landless respondents in the cleanliness of buffalo shed followed by height of buffalo shed and expulsion of placenta where as the farmers of other groups possessed highest knowledge about height of buffalo shed. Almost similar observations were recorded in case of farmers

having up to 2 hectare of land and more than 2 hectare of land. Knowledge about buffalo husbandry management practices was found among various categories of respondents in the area of disinfestations of shed before calving and type of housing system. Education, extension contact and attitude of farmers towards recommended buffalo husbandry management practices were found important variables, which influence their knowledge.

George *et al.* (2010) in his study observed that very few women had correct knowledge about important aspects of breeding, housing and deworming of goats. Nearly three fourths of them had correct knowledge about vaccination against foot and mouth disease.

Joshi *et al.* (2011) reported that NAIP has made significant impact on technological empowerment of tribal women as the beneficiaries exhibited higher knowledge than non beneficiaries in all the components of improved cattle, goat and poultry rearing practices.

Kumar *et al.* (2011) reported that majority of dairy farmers had medium knowledge on different component of scientific dairy farming practices. But, very few dairy farmers had high knowledge about the scientific dairy farming practices which showed that different dairy development agency working in Banka district was not providing adequate knowledge about the improved dairy farming practices among the farmers. The knowledge index of different aspect of scientific dairy farming practices of breeding, feeding, health care and management were 42, 37.84, 39.75 and 41.73 respectively and overall knowledge index of improved dairy farming practices were 39.63 which indicates poor knowledge level of dairy farmers in the study area.

2.6 Constraints in adoption of improved goat rearing practices:

Hariharan (1992) reported that the traditional goat production suffers from many constraints of which diseases and heavy kid mortality are the primary ones. Lack of support services such as marketing, Extension and credit facilities are also important constraint which must be taken care in changing the attitudes of farmers towards modern techniques in goat production.

Suresha *et al.* (1993) reported that majority of beneficiaries opined that lack of grazing land facilities (85.4%, due to strict forest rules), supply of inferior animals (85.4%), lack of Extension education activities (81.75%) and neglect of veterinary personnel (77.08%) as the constraints faced by them to a greater extent.

Sivanarayana and Reddy (1995) observed that lack of knowledge, non availability of crossbreds, poor adaptability of crossbreds, lack of awareness of the practice, scarcity of own grazing land, poor economic status, negligence of the improved practice, non availability of concentrate mixture, difficulty in premium payment and indifferent attitude towards insurance of animals were the major constraints that were found in the adoption of improved sheep and goat practices by the small and marginal farmers in diversified farming.

Pandey (1996) reported that about two third of the respondents were unaware of adoption of cross breeding of local doe with Beetal buck. Almost equal percentage of them expressed non availability of Beetal bucks in the area as major constraints whereas, less than a quarter of goat rearers identified poor adaptability of cross bred as a reason behind non adoption of cross breeding.

Thombre *et al.* (2010) reported that non availability of veterinary services in the village in time (80.55%) followed by costly veterinary services (76.38%), inadequate and untimely loan supply (68.05%) were major problems faced by the goat keepers.

Devaki and Kumar (2011) reported that access to credit information and skill learning is still a constraint for most women in the areas of poultry management, dairy, sheep and goat rearing etc.



Material and Methods

This chapter deals with the methods and techniques used in the present study. Research methodology is the backbone of any research work. It refers to the process, methods and procedures to approach research problems and seek answers. Methods of social research are built on a foundation of social science theory which is constructed on the basis of assumptions that are more often implicit than explicit.

The research design including the methods and procedures employed in conducting the present study is described here under the following subheads:

- 3.1 Prelude to fact finding
- 3.2 Selection of the study locale
- 3.3 Sampling plan
 - 3.3.1 Selection of the blocks
 - 3.3.2 Selection of the villages
 - 3.3.3 Selection of the respondents

- 3.4 Variables under the study and their empirical measurement
- 3.5 Data collection
- 3.6 Statistical analysis

3.1 PRELUDE TO FACT FINDING

It was considered essential to go through available literatures including books, journals, bulletins, periodicals, leaflets etc. to have a sound theoretical background of the problem. Meeting with local farmers and extension experts helped in having more insight of the situation and enthused to have a study of such people who were considered to be exploited and deprived of developmental benefits.

On the basis of theoretical background, thus acquired an outline of the proposed study was prepared stating these in the title of the study, statement of the problem, objectives and design of research, methods of data collection and statistical analysis.

3.2 SELECTION OF THE STUDY LOCALE

3.2.1 Selection of state

Success of any social research depends upon direct communication between the researchers and the respondents to build good rapport and to ensure free and frank expression of responses. For this purpose the researcher's own state namely, Jharkhand was selected for the study.

The Jharkhand state

The 28th state of the Indian Union, Jharkhand, was brought into existence by the Bihar reorganization Act on November 15, 2000 -

the birth anniversary of the legendary Bhagwan Birsa Munda. Jharkhand (Land of forest) is popularly known as Vananchal (meaning land of woods).

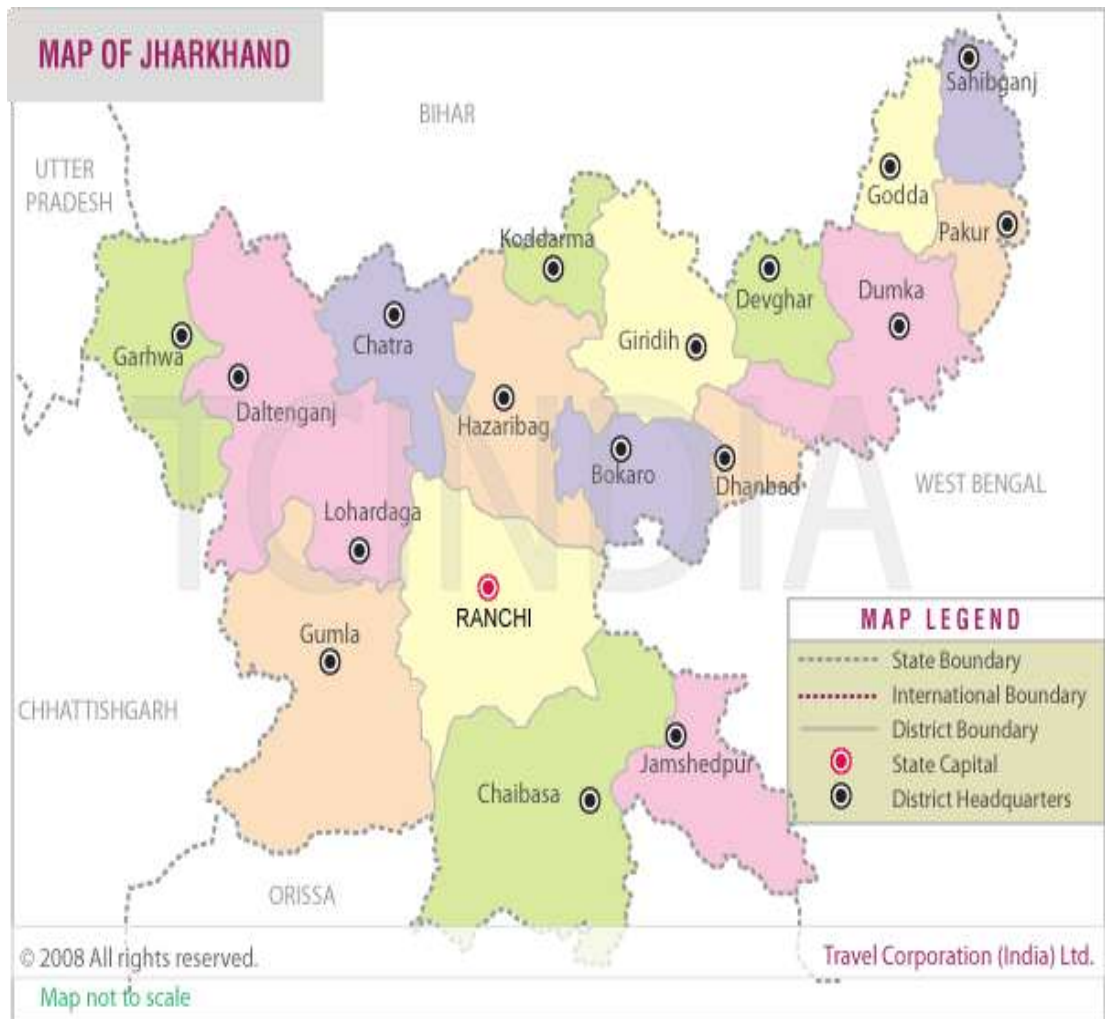
Jharkhand is located in eastern India and is surrounded by Bihar to the north, Uttar Pradesh and Chhattisgarh to the west, Orissa to the south, and West Bengal to the east. The state covers a geographical area of 79.70 lakh hectares. Out of 79 lakh hectares geographical area of Jharkhand state, the net cultivated area is around 22 lakh hectares. Area under forest is 29 percent (23 lakh hectares). Forests and woodlands occupy more than 29% of the state which is amongst the highest in India.

The population of Jharkhand state is 3 million twenty nine lac sixty six thousand two hundred thirty eight (3, 29, 66, 238). About two third of this population lives in rural area .Density of population is 414km² where as sex ratio is 947.

Jharkhand is famous for its rich mineral resources like Uranium, Mica, Bauxite, Granite, Gold, Silver, Graphite, Magnetite, Dolomite, Fireclay, Quartz, Feldspar, Coal (32%of India), Iron, Copper (25% of India) etc.

JHARKHAND – At a Glance

Capital	Ranchi
Population	3,29,66,238
Male population	1,69,31,688
Female population	1,60,34,550
Sex ratio	947
ST	28% of total
SC	12% of total
Literacy rate	67.63%
Per capita Income	Rs. 4161
Density of Population	338 persons / Sq. KM
No. of Districts	24
No. of Sub divisions	35
No. of Blocks	260
No. of Villages	32620
No. of Villages Electrified	14679 (45 % of Total)
No. of Villages connected by roads	8484
National Highways	1006 KMs
State Highways	4662 KMs
Health centers	506
Schools	21386
Universities	5 (Incl. One deemed Uni.)
Total Geographical Area	79.70 Lakh Hectares
Cultivable Land	38.00 Lakh Hectares



Map 1: Map of Jharkhand state showing Ranchi district

Forest	29% of total area
state animal	elephant
state bird	Koel
state tree	sal
state flower	palash

The climate of the region is influenced by geographic location and physical features. Located on an elevation of 300 to 610 meter above sea level, the climate ranges from dry semi humid to humid semi-arid types.

Animal Husbandry has a good prospect in the state due to availability of vast stretches of grazing land and limited agricultural activities. The livestock population in Jharkhand reveals improvement in cattle, goat and pig during the last 10 years. The livestock production is a family operation and is an important source of employment generation and supplementary income.

The state of Jharkhand has tremendous potential for milk production activities as the agro-climatic conditions of this state are ideally suited for cross-breed milch cattle with moderate production capacity especially of 50% exotic inheritance from Holstein Friesian. There is adequate market potential for sale of milk and milk products in this state due to a number of industrially developed areas.

3.2.2 Operational Area

The present study was conducted in the Ranchi district of Jharkhand state. The Ranchi district was selected purposively due to the following reasons:

- a) Familiarity of the area to the investigator which is necessary to

elicit the information from the respondents within the limited time.

- b) Assured cooperation of the goat farmer in the selected district.
- c) Availability of time and resources with the researcher for in-depth study.

Ranchi District

Ranchi district is one of the twenty-four districts of Jharkhand state in eastern India. It is bounded by the districts of Hazaribagh in north, Paschimi Singhbhum in the south, in the east by the district of Purulia (West Bengal) and in the west by the district of Lohardaga.

The geographical area now comprising Ranchi district was formerly part of old Lohardaga district of the British India. In the year 1831-32, a part of old Lohardaga district was carved out and given the name of the *Non-regulation South-West Frontier*, and in 1899 the name of the district was changed to Ranchi district. Ranchi was the name of a small tribal village which has since been assimilated into the city of Ranchi.

Ranchi, the capital city of Jharkhand District is spread over 7,574 sq. km. spanning from 23°23' North latitude to 85°23' East longitude. Ranchi is located an altitude of 2,140 m above sea level. The annual rainfall is 1530 mm. There are mainly three climates namely summer, winter and rainy seasons. The temperature varies, like in winter the min. is 10.3 and max. is 22.9 while in summer min. is 20.6°C and max. is 42°C.

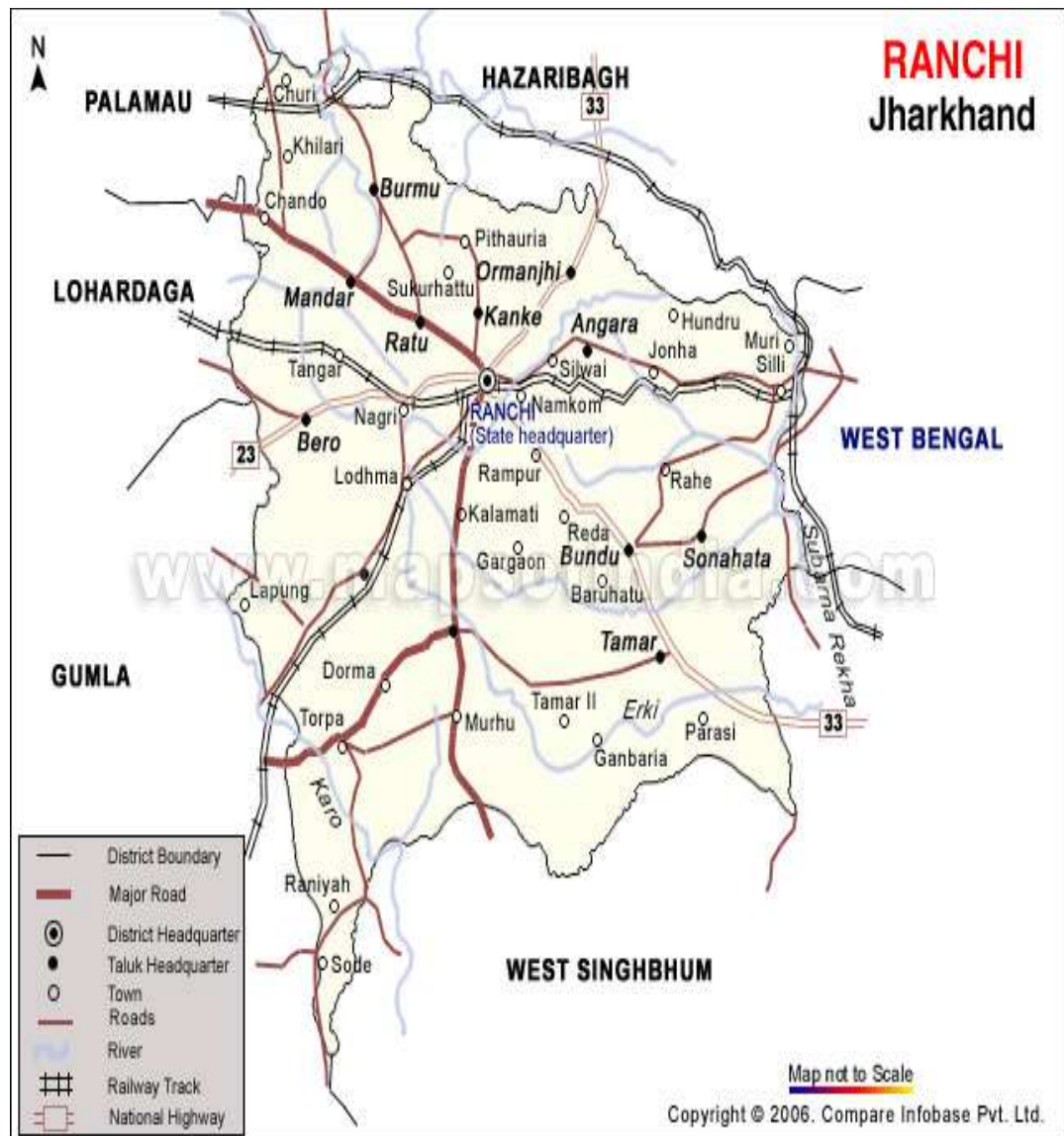
Although urban, Ranchi spellbinds tourists with its stunning scenery. The gurgling cascades of the Hundru, Jonha, Dassam, Hirni

and Panch Gagh waterfalls coupled by the revered Jaganathpur, Ranchi Hill and Pahari Mandir temples and the nearby Tagore Hill, McCluskigunj, Machli Hill, Muta Crocodile Breeding Center and Gonda Hill and Rock Garden is eminent tourist spots.

The main tribes of the district are Oraon and Munda. Some minerals are also found in this district. But the main ones are limestones, coal, asbestos, and ornamental stones, etc. The important crops are rice, millets pulses and oil seeds.

Ranchi – At a Glance

Area	7,574 sq. km.
Latitude	23.23 N
Longitude	85.23 E
Height from sea level	2,140 m
Population	27,85,064
Population density	362
Scheduled tribe	43.56 percent
Scheduled caste	5.57 percent
Literacy rate	65.69 percent
Climate	Summer, Winter and Rainy seasons
Rainfall	1530 mm
Temperature	Winter (min. 10.3 and max. 22.9) Summer (min. 20.6 and max. 37.2)
Languages	Hindi, Nagpuri, Oraon, Mundari



Map -2: Map of Ranchi district showing blocks under study

and Kurmali	
Important Rivers	Subarnarekha, South Koel and Sankh
Important crops	Rice, millets pulses and oil seeds
Main tribes	Oraon and Munda
Minerals	Limestones, coal, asbestos, and ornamental stones
Tourist spots	Hundru, Jonha, Dassam, Hirni And Panch Gagh waterfalls; Jaganathpur, Ranchi Hill and Pahari Mandir temples; Tagore Hill, McCluskiqunj, Machli Hill, Muta Crocodile Breeding Center and Gonda Hill and Rock Garden are eminent.

The languages, which are normally spoken, are Hindi, Nagpuri, Oraon, Mundari and Kurmali. Important rivers that flow through the district are Subarnarekha, South Koel and Sankh. Roadways, airways as well as railways connect the district with other parts of the country. NH-33 and NH-23 connects the district very well.

According to 2001 census report, the total numbers of households are 5,05,508 while total population is 27,85,064. The population density is 414 persons per km². Out of the total population in the district, the rural population constitutes 77.94 percent. In Ranchi district, 43.56 percent population is scheduled tribe, 5.57 percent scheduled caste and others 50.87 percent. The literacy rate is

about 67.63 percent. Out of total population, 15,00,541 persons are literate. The sex ratio is higher in male than in female.

Out of total operational holding of 2,44,073 in the district, 72 percent are owned by small and marginal farmers accounting for 24 percent of the total area. 48 per cent of the small and marginal farmers belong to tribal community with average size of land holding 0.62 hectares.

In this region, 45 percent of the land is not under cultivation, 35 percent of it is covered by forest and 7 percent is cultivable. Major portion of the land is undulating and uncultivable and fertility of soil is poor and hardly 2 percent land is under assured irrigation. Thus the scope of expansion of Animal Husbandry is far great and can be adopted as means of livelihood. Further more, people of this region are emotionally attached with domestic animals and have been keeping them since time immemorial. To improve their lot, it was therefore imperative to introduce scientific methods of livestock management to maximize the production.

3.3.1 Selection of Blocks

Out of the 24 blocks of Ranchi district, three blocks namely, Kanke, Ormanjhi, and Ratu were selected randomly for the study.

3.3.2 Selection of Villages

Five villages were selected at random from each block. Thus a total of 15 villages were selected for the study which are shown in TableA.1.

Table A.1. List of selected villages

Blocks	Villages	No. of villages selected
Kanke	a. Hocher b. Boreya c. Murum d. Batta e. Kumharia	5
Ormanjhi	a. Kuchu b. Kulhi c. Gangutola d. Dahubartoli e. Khanga	5
Ratu	a. Amtard b. Kathitard c. Jhakhratoli d. Hurhuripetha e. Makhundro	5

3.3 SAMPLING PLAN

The sampling plan followed for the present study is as follows :

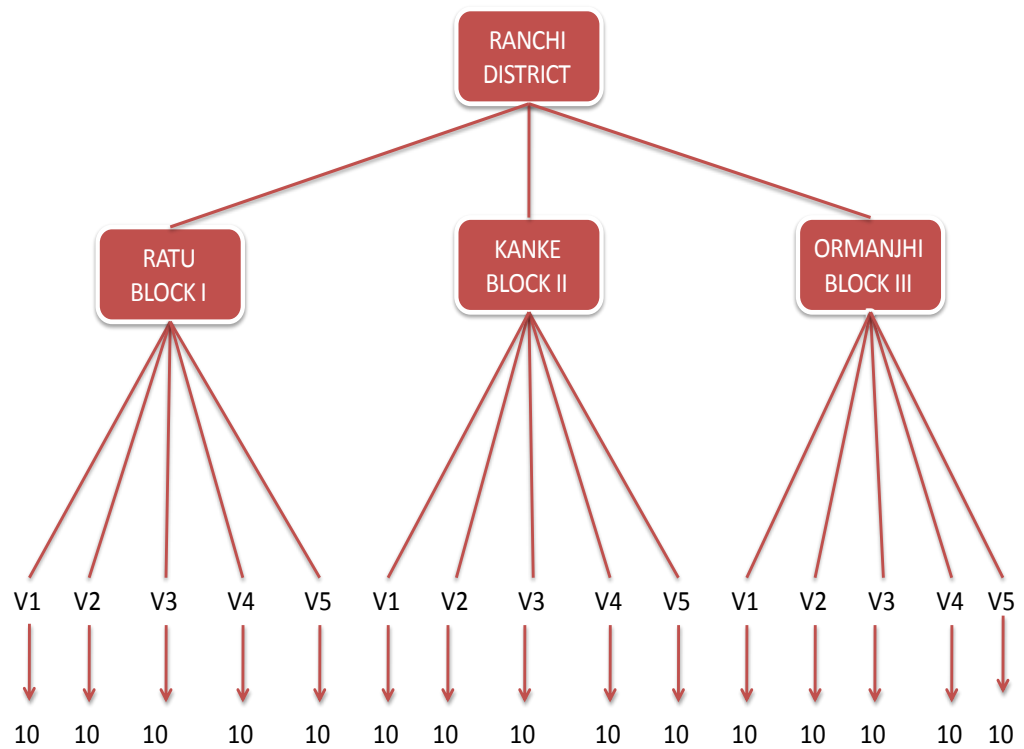


Figure A. 1: Sampling plan

3.3.3 Selection of the Respondents

All the goat owners in the selected villages formed the universe of the study. From the universe, 10 farmers having at least two or more goat from each village were selected randomly. Thus 50 farmers each from one block were selected and finally a total of 150 farmers were selected randomly for the present study

3.4 Variables under study and their empirical measurement

3.4.1 Socio-personal variables

Following variables were selected under socio-personal category.

1. Age

It refers to chronological age of the respondents to nearest whole number at the time of investigation. Further on the basis of age, the respondents were grouped into 3 categorie (Trivedi scale 1963):

Young : 18 to 30 years

Middle : 31 to 50 years

Old : 51 years & above

2. Sex

It refers to the sex of the respondent. It may be either male or female

3. Category

It refers to the race or community which a respondent is affiliated to. The respondent was categorized into three caste group as

General caste

Schdule caste

Schedule tribe

4. Education

It refers to the numbers of year of formal schooling or college study of the respondents. The respondent were classified on the basis of education as (Trivedi ,1963)

<u>Category</u>	<u>No of years of schooling</u>
Illiterate	1
Upto primary level	2
Upto middle level	3
Upto high school	4
Upto intermediate level	5
Graduate and above	6

5. Family Size

It means the number of individual living together and sharing the kitchen in a household. This was quantified by socioeconomic scales of Trivedi (1963)

Small – upto 5 members

Middle – 6 to 9 members

Large – above 9 members

6. Type of family

There are mainly two type of family .When a spouse live only with their children this is called as nuclear family and when their nuclear type of family incorporates some of the closely related kins, then it becomes the joint family. This was quantified by socio - economic scale of Trivedi (1963)

Nuclear	-	1
Joint	-	2

7. Social participation

Social participation is the participation and involvement of the farmers in any formal and informal organization or institute. More social participation develops broader outlook, greater emphatic ability and correct perception. It shows the degree to which the farmers are involved in formal or informal organization as a member or office bearer

It was quantified as:

No participation	- 1
Member of one organization	- 2
Office bearer of any organization	- 3

8. Extension contacts

It refers to the number of visits made by an individual livestock rearing farmers and extension agent. The respondents were categorized as:

High (Monthly)	– (4)
Medium (6 monthly)	– (3)
Low (Yearly)	– (2)
No contact	– (1)

9. Mass media exposure (M.M.E.)

It refers to how far the respondents are exposed to the mass media like films, radio, T.V, written or printed material, goat mela, farmer tour, farmer's day demonstration, meeting etc. It was also measured on a four point continuum viz, frequently, often, seldom, never with respective scores of 3, 2, 1 and 0. The respondent were categorized by using the range as :

Low MME	– upto 3 score
Medium MME	– 4-8 scores
High MME	– 9 and above scores

10. Training orientation

This refers to any type of training received by the respondents on improved livestock rearing practices through government, agricultural universities, KVK, NAIP or other organization.

3.4.2 Socio – economic variable

Following variables were selected under socio-economic category.

1. Occupation

This refers to the family's economic activities to earn a livelihood. The economic activity where sub-divided into primary as well as secondary occupation. Further four predominant occupations viz cultivation, livestock rearing, labor, and service were enlisted. From the list, the respondents were asked to indicate their primary and secondary occupation.

2. Landholding

It refers to the cultivated land owned by the respondents. The respondents were classified into following categories on the basis of land holding by adopting standard Trivedi scale and were classified as

		<u>Score</u>
Landless	No land	1
Marginal	Upto 2.5 acres	2
Small	2.51 to 5.00 acres	3
Medium	5.01 to 10.00 acres	4
Large	More than 10.0 acres	5

3. Herd size

It refers to the total number of goat in possession of the respondent. It was categorized as under:

Small	–	(less than 10)
Medium	–	(11 to 15)
Large	–	(16 and above)

4. Socio-economic status

Socio-economic status was measured with the help of “Socio-economic status scale” which was developed by Pareek & Trivedi (1963) and scale was modified for study. The respondents were classified under, with their scores / points allotted to each one of them as:

Land	–	10 points/hectare
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Livestock:

Milch cattle	–	3 points/head
Daught cattle	–	4points /head
Young stock	–	1.5 point/head
Goat	–	1 point /head
Pig	–	1 point /head
Poultry	–	0.5 point / head

Implements:

Cycle, radio, T.V.	–	1 point /head
Sewing machine	–	2 points /head
Pucca house	–	3 points /head
Kuccha house	–	1points/head
Mixed house	–	2 points /head

Then respondent were classified into three groups viz.

Low	-	(upto 35 points)
Medium	-	(36 to 65)
Large	-	(66 and above)

5. Income of the respondent

It indicates the total monthly income of the respondent from all the sources put together. The respondent were categorized into five groups as

Income less than Rs. 1000 per month

Income between Rs.1000-2000 per month

Income between Rs.2000-3000 per month

Income between Rs 3000-4000 per month

Income above Rs.4000 per month

3.4.3 Adoption of goat rearing practices

Extent of adoption of improved goat raring practices (IGRP) measured with the help of scale developed by Roger and Shoemaker (1971) and it will be calculated by the formula

$$\text{Extent of Adoption of IGRP} = \frac{\text{number of practices adopted}}{\text{number of practices recommended}} \times 100$$

3.4.4 Knowledge of improved goat rearing practices(IGRP):

Knowledge is one of the important components of behavior and hence it plays a vital role in adoption behavior of the farmers. To measure this variable the Rajkamal (1993) scale was used.

$$\text{Knowledge index} = \frac{X_1 + X_2 + X_3 + \dots + X_n}{\dots} \times 100$$

n

Where,

$X_1, X_2, X_3, \dots, X_n$ = number of correct responses

n = total number of statement

The respondents were further categorized into three groups based on maximum and minimum score

<u>Score</u>		
1 st category (low)	-	(0-13)
2 nd category (medium)	-	(14-26)
3 rd category (high)	-	(27 & above)

3.4.5 Constraints

Barriers coming in the way of adoption of recommended practices. It was ascertained through open ended question. Constraints were measured with two point continuum scale viz correct and incorrect with the score 1 and 0 and they were ranked according to their total scores obtained.

3.5 Methods of data collection

The primary data was collected with the help of structured interview schedule incorporating all the parameters on which information was required .All the respondent were individually contacted in the village.

3.6 Analysis of data

The data collected were coded, compiled, tabulated & analyzed as per statistical test required.

The following statistical devices were used.

- 1) Frequency and percentage
- 2) Mean/average, standard error, and standard deviation

according to Snedecor and Cochran(2004)

- 3) Analysis of variance
- 4) Correlation coefficient



Results and Discussion

The investigation on the goat rearing and its constraints in and around of Ranchi led to several important observations. In the light of set-forth objectives, the collected data were analyzed in respect of various aspect and result were drawn. The present chapter embodies the results of the study under the following subheads:

- 4.1 Socio – personal characteristics of the respondents
- 4.2 Socio – economic characteristics of the respondents
- 4.3 Existing goat farming practices of goat farmers viz. breeding, feeding, management & disease control
- 4.4 Adoption level of farmers about the improved goat rearing practices and its correlation with different variables
- 4.5 Knowledge level of farmers about the improved goat rearing practices and its correlation with different variables
- 4.6 Constraints experienced by the farmers in goat rearing

4.1 SOCIO-PERSONAL VARIABLES

The variable age, sex, category, education, family size, type of the family, social participation, extension contact, and mass media exposure had been included under socio-personal variables in the study. A description pertaining to this is given below:

4.1.1 Category

In rural and urban India, caste still remains a matter of vital importance. The social stratification in forms of category of the selected respondents is shown in table-2

It is evident from the table that large percentage of the respondent 50 % in Kanke block, 56% in Ormanjhi & 46% in Ratu block were found to come under General category. Overall in study area majority of the respondent were (50.67%) were found to come under General category, followed by ST category (43.33%) and SC category (6%).

Table 1: Distribution of respondent according to category

Category of the respondent	KANKE		ORMANJHI		RATU		Pooled	
	f	%	f	%	f	%	f	%
General	25	50.00	28	56.00	23	46.00	76	50.67
SC	5	10.00	1	2.00	3	6.00	9	6.00
ST	20	40.00	21	42.00	24	48.00	65	43.33
Total	50	100.00	50	100.00	50	100.00	150	100.00

The findings of the study agree with that of Kumar (1995) and Seth (2004).

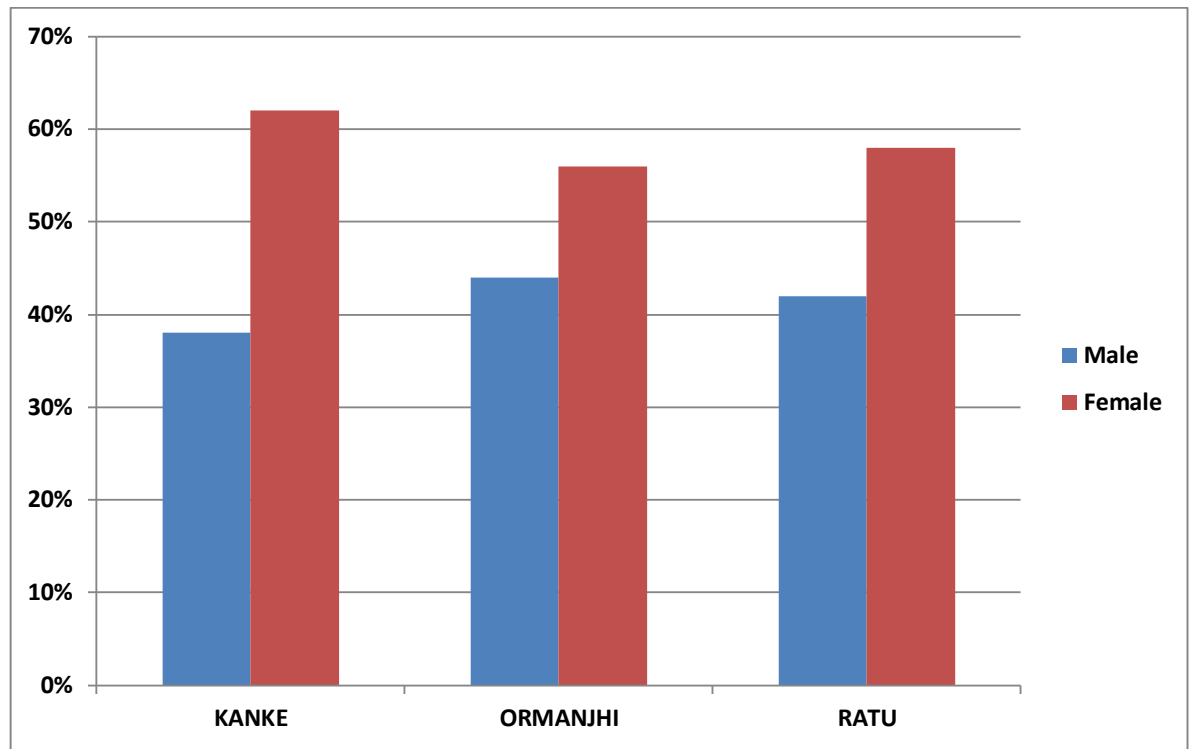


Figure-1: Distribution of respondents according to Sex

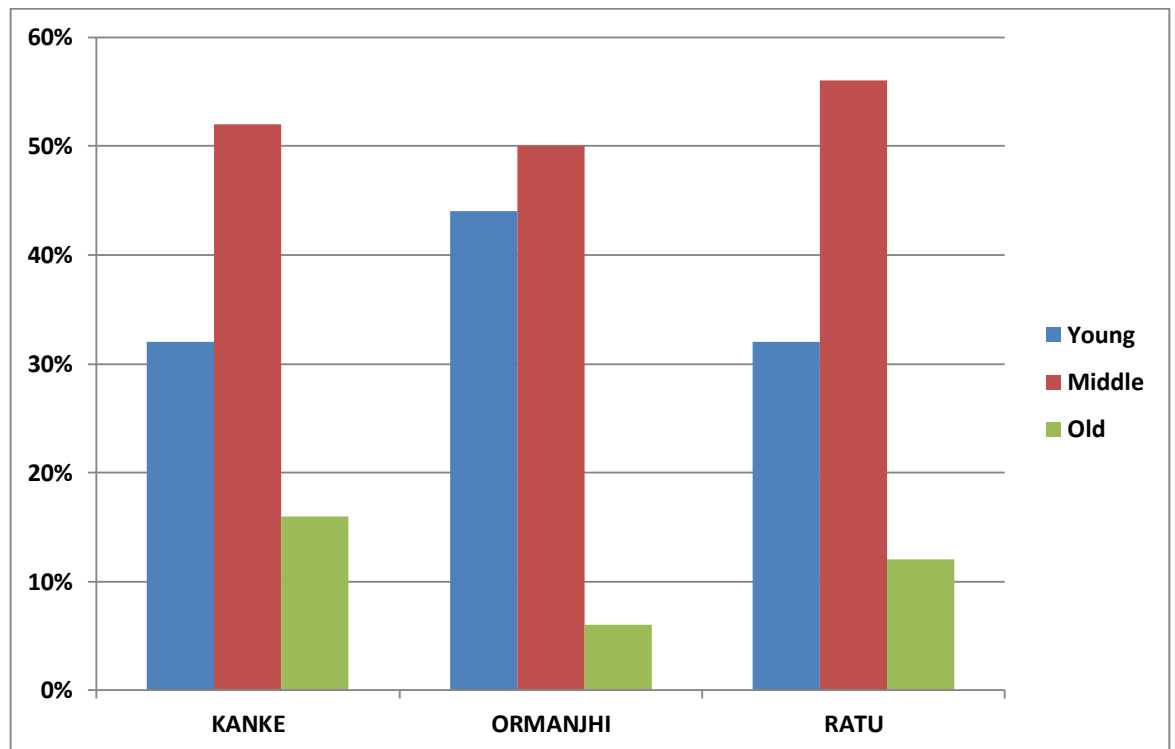


Figure2: Distribution of respondents according to Age

4.1.2 Sex

Majority of the respondent in Kanke block (62%), Ormanjhi block (56%) and Ratu block (58%) were female. In overall basis 58.67% of respondents were female where as 41.33% of respondents were male.

Table 2: Distribution of respondent according to sex of the respondent

Sex of the respondent	KANKE		ORMANJHI		RATU		Pooled	
	f	%	f	%	f	%	f	%
Male	19	38.00	22	44.00	21	42.00	62	41.33
Female	31	62.00	28	56.00	29	58.00	88	58.67
Total	50	100.00	50	100.00	50	100.00	150	100.00

4.1.3 Age

Table -3 reveals that most of the respondents in Kanke block (52%), Ormanjhi block (56%), Ratu block (53%), were belonging to middle age group ranging from 31 to 50 years of age. The average age of respondents were found to be 36.66 ± 1.96 years in kanke block, 31.12 ± 1.70 years in Ormanjhi block and 36.48 ± 1.84 in Ratu block. There was not much difference in of the members of different block. From Table- 4, it can be inferred there is no significant difference in F-value.

It is evident from the data that majority of respondents belonged to middle age group which has enthusiasm of the youth and experience of the old. This finding is in line with that of Singh (1989), Verma (1993), Khatic (1994), Kumar (1995), Oraon (1997), Sawant (2003), Deshmukh (2005), Shisode *et al.* (2009) and Rathod *et.al.* (2011).

Table 3: Distribution of respondent according to socio-personal variable of the respondent

Sl. No	Variables	Classification	KANKE		ORMANJHI		RATU		Pooled	
			<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
1	Age	Young	16	32.00	22	44.00	16	32.00	54	36.00
		Middle	26	52.00	25	50.00	28	56.00	79	53.00
		Old	8	16.00	3	6.00	6	12.00	17	11.00
		Total	50	100.00	50	100.00	50	100.00	150	100.00
2	Education	Illiterate	28	56.00	32	64.00	26	52.00	36	57.33
		Primary	12	24.00	13	26.00	14	28.00	41	27.33
		Middle	6	12.00	3	6.00	6	12.00	34	22.67
		High School	3	6.00	2	4.00	4	8.00	37	24.67
		Intermediate	1	2.00	0	0.00	0	0.00	1	0.66
		Total	50	100.00	50	100.00	50	100.00	150	100.00
3	Family type	Nuclear family	35	70.00	38	76.00	36	72.00	109	72.67
		Joint family	15	30.00	12	24.00	14	28.00	41	27.33
		Total	50	100	50	100	50	100	150	100
4	Family size	Small (5 & below)	33	66.00	32	64.00	34	68.00	99	66.00
		Medium(6-9)	5	10.00	4	8.00	3	6.00	12	8
		Large (>9)	12	24.00	14	28.00	13	26.00	39	26.00
5	Social participation	No participation	28	56.00	30	60.00	33	66.00	91	60.67
		Members of one organization	20	40.00	20	40.00	17	34.00	57	38.00
		Office bearer	2	4.00	0	0.00	0	0.00	2	1.33
		Total	50	100	50	100	50	100	150	100
6	Extension Contact	Once in six month	6	12.00	5	10.00	5	10.00	16	10.67
		Once in a yearly	30	60.00	11	22.00	9	18.00	50	33.33
		No Contact	14	28.00	34	68.00	36	72.00	84	56.00
		Total	50	100.00	50	100.00	50	100.00	150	100.00

Table – 4: Average socio-personal characteristics along with standard error (S.E.) and f-value

Sl. No.	Variables	KANKE	ORMANJHI	RATU	f- value
		Mean±S.E.	Mean±S.E.	Mean±S.E.	
1	Age(years)	42.66±1.96	41.12±1.70	38.48±1.84	0.93
2	Education	3.94±0.28	3.88±0.27	3.90±0.26	0.01
3	Family type	1.30±0.07	1.24±0.06	1.28±0.06	0.23
4	Family size	2.26±0.09	2.2±0.08	2.2±0.08	0.17
5	Social participation	2.2±0.08	1.46±0.08	1.4±0.07	.070
6	Ext. Contact	1.34±0.07	1.44±0.10	1.42±0.10	0.10

4.1.4 Education

Educational status has been considered as an important contributor for socio-economic upliftment. Education is generally believed to have the effect on widening the mental horizon of a person and thereby prepares or predisposes him to be receptive to new ideas.

The distribution of respondents on the basis of their education is depicted in Table-3. It reveals that there was not a uniform distribution of respondents according to their educational level among three blocks. In overall 57.33% respondents were illiterate, 27.33% respondents were educated upto primary school, 22.67% were educated upto middle, 24.67% were educated upto high school and only 0.66% was educated upto intermediate, None of the respondent wa educated upto graduate level or above. The average education level of all three block is shown in table-4 and there is not much difference in education level of blocks. From Table-4, it can be inferred there is no significant difference in F-value.

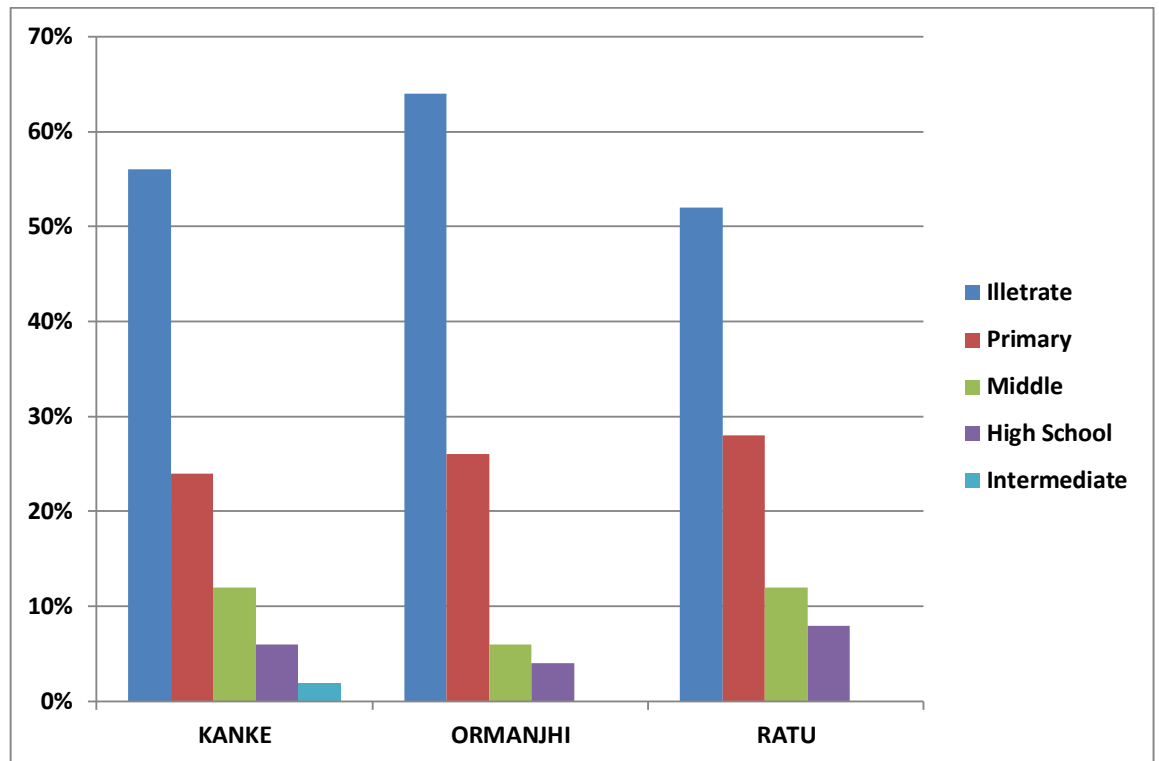


Figure-3: Distribution of respondent according to Education

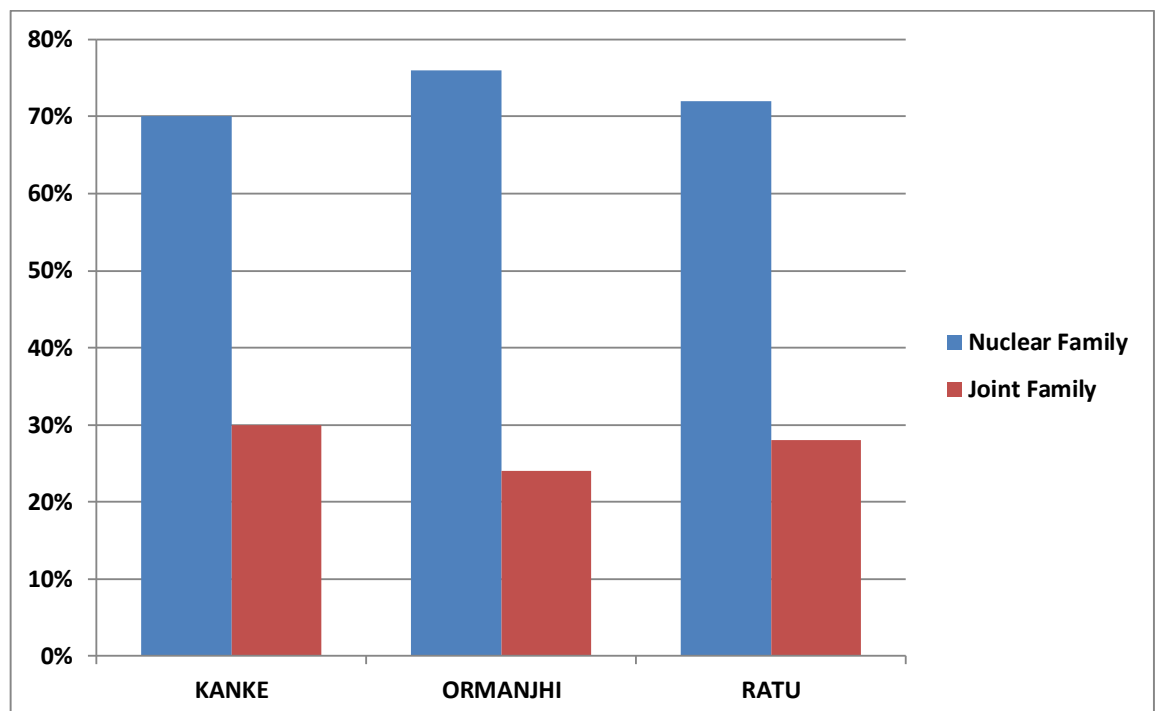


Figure- 4: Distribution of respondent according to Family type

Thus in the present study, the education level was found to be quite substantial which do agree with the findings of Srivastava (1982), Pandey (1996) and Oraon (1997) who reported very low literacy rate.

It can be inferred from the present study that impact of education was quite significant in the study area as most of the respondent were illiterate. It can be inferred from the present finding that the importance of education is gradually realized by the goat farmers due to the impact of urbanization and modernization.

4.1.5 Family type

Table-3 reveals that most of the respondents 70% in Kanke, 76% in Ormanjhi and 72% in Ratu block belonged to nuclear type of family where as 30% in Kanke, 24% in Ormanjhi and 28% in Ratu block belonged to joint type of family. The pooled value showed that 72.67% respondents were from nuclear type family and 27.33% belonged to joint type of family. From Table-4, it can be inferred there is no significant difference in F-value.

This observation is in the line with that of Sachchidanand (1979) and Srivastava (1982) who found that most dominant pattern of family among tribes was the nuclear type.

4.1.6 Family size

Table -3 reveals that majority of the respondents 66% in Kanke block, 64% in Ormanjhi block and 68% in Ratu block were belonged to small sized family (upto 5) where as 24% in Kanke block, 28% in Ormanjhi block and 26% in Ratu block were belonged to large sized family. Overall pooled value showed that 66% respondents were having member in the family upto 5 followed by 26% having morethan9 members in the family & 8% having members 6-9. From

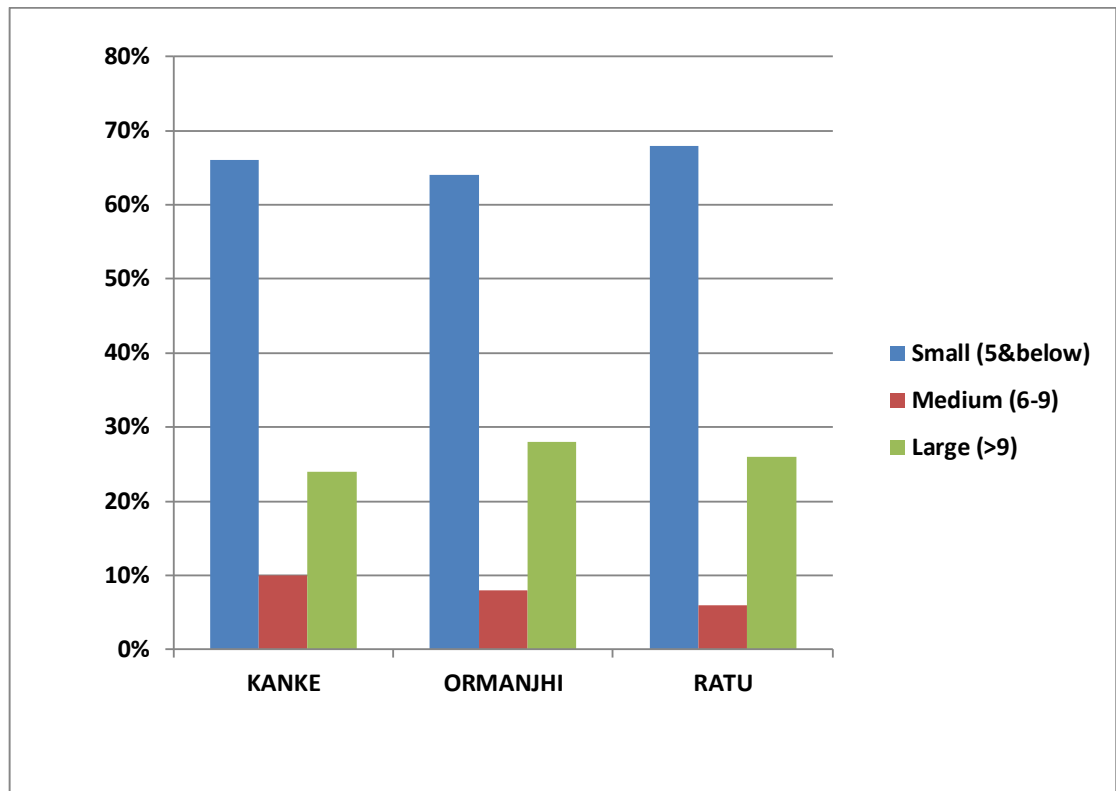


Figure 5: Distribution of respondent according to Family size

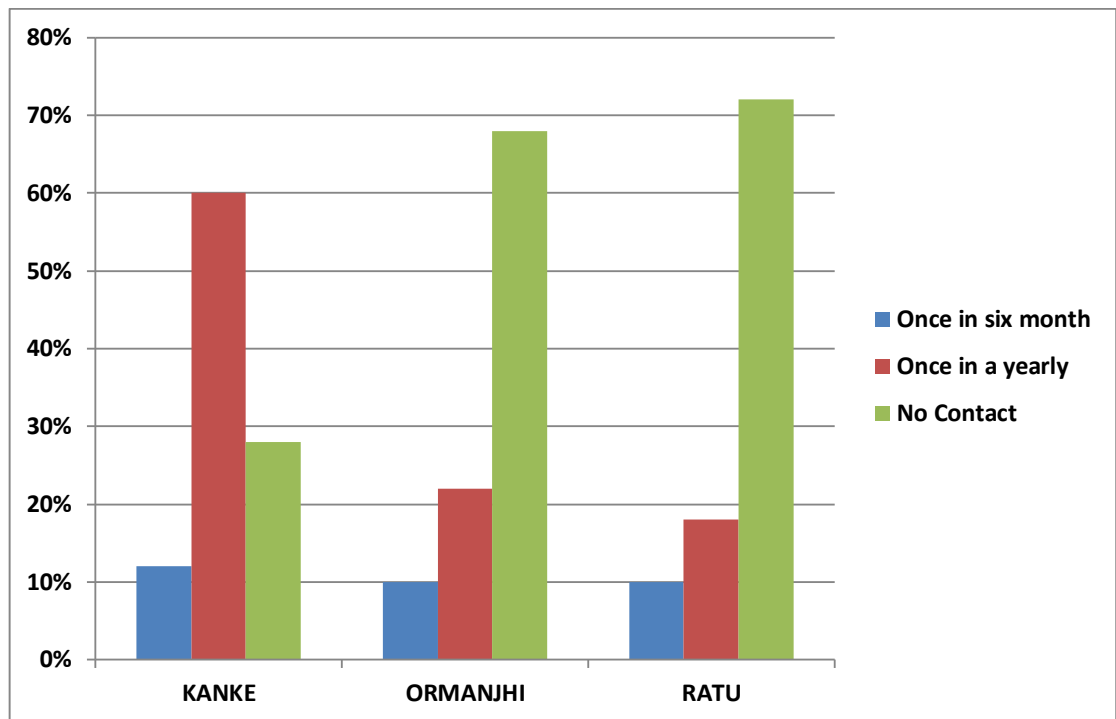


Figure 6: Distribution of respondent according to Extension Contact

Table - 04, it can be inferred there is no significant difference in F-value.

The findings get support from Srivastava (1982), Khatik (1994), Pandey (1996), Singh (2007) and Shewta (2010) who reported that average size of the family varying between 5 to 8 persons.

4.1.7 Social participation

Distribution of respondent on the basis of social participation has been presented in table-3. It indicates that 56% of the respondents in Kanke, 60% in Ormanjhi & 66% in Ratu were not member of any organisation where as 40% in Kanke, 60% in Ormanjhi & 34% in Ratu were member of one organisation. Only 4% in Kanke block were office bearer of any organization . Overall pooled value showed that 60.67% were not having any social participation, 38% of the respondent member of one organisation & 1.33% were office bearer of any organization . From Table-4, it can be inferred there is no significant difference in F-value.

This finding is in line with that of Srivastava (1982) who reported no social participation among majority of Munda tribes of Chotanagpur and Kapgate and Ingle (1990) also reported low social participation among tribes in the state Maharashtra.

The reason for low social participation could be attributed to lack of need based organization in the area.

4.1.8 Extension contact

The respondents closeness with the extension worker is termed as extension contact. Table-3 represents the distribution of respondents according to the extension contact. 28% of the

respondent in Kanke block, 68% in Ormanjhi & 72% in Ratu were having no extension contact, where as 60% in Kanke block, 22% in Ormanjhi & 18% in Ratu were having once in a year extension contact.

No respondent of either block having once in a month extension contact. Overall pooled value showed that majority of respondent that is 56% having no extension contact, 33.33% were having once in a year and 10.67% were having once in six month extension contact.

This finding is in line with Vidyarthi (2003) who found that majority of respondent have no extension contact. This finding is not in line with Oraon (1989) who reported high extension contact among their respondents.

Low or no extension contact among the respondents to various agency may be due to the fact that extension worker may be concentrating more on agricultural activities and ignoring the goat farming activities. The extension workers are also high pressed with the administrative works and getting a little time to contact the farmers (Kumar, 1996).

4.1.9 Training orientation

Table-5 reveals that majority of the respondents 84.67% were having low (>4) training orientation and only 14% (4-8) & 1.33% (>8) respondents have medium and high training orientation respectively.

This finding is in agreement with Seth (2004) and Singh (2007).

It may be due to the fact that the training organizations are located in urban and semi urban areas and people living nearby that organization got the opportunity for training.

Table 5: Distribution of respondent on the basis of training orientation

Training orientation of the respondent	KANKE		ORMANJHI		RATU		Pooled	
	f	%	f	%	f	%	f	%
Low (< 4)	35	70.00	47	94.00	45	90.00	127	84.67
Medium (4-8)	13	26.00	3	6.00	5	10.00	21	14.00
High (>8)	2	4.00	0	0.00	0	0.00	2	1.33
Total	50	100.00	50	100.00	50	100.00	150	100.00

4.1.10 Mass media exposure

Mass media exposures are quickest mean to spread the information to a large number of people in short time. Mass media exposure plays an important role in creating awareness and interest regarding improved technologies among the people.

Table 6: Distribution of respondent on the basis of mass - media exposure

Mass Media exposure of the respondent	KANKE		ORMANJHI		RATU		Pooled	
	f	%	f	%	f	%	f	%
Low (< 4)	40	80.00	47	94.00	46	92.00	133	88.67
Medium (4-8)	9	18.00	3	6.00	4	8.00	16	10.66
High (>8)	1	2.00	0	0.00	0	0.00	1	0.67
Total	50	100.00	50	100.00	50	100.00	150	100.0

Table -6 showed the distribution of respondent on the basis of their mass media exposure. Pooled value showed that 88.67% respondent were fell in low mass media exposure, followed by 10.66%

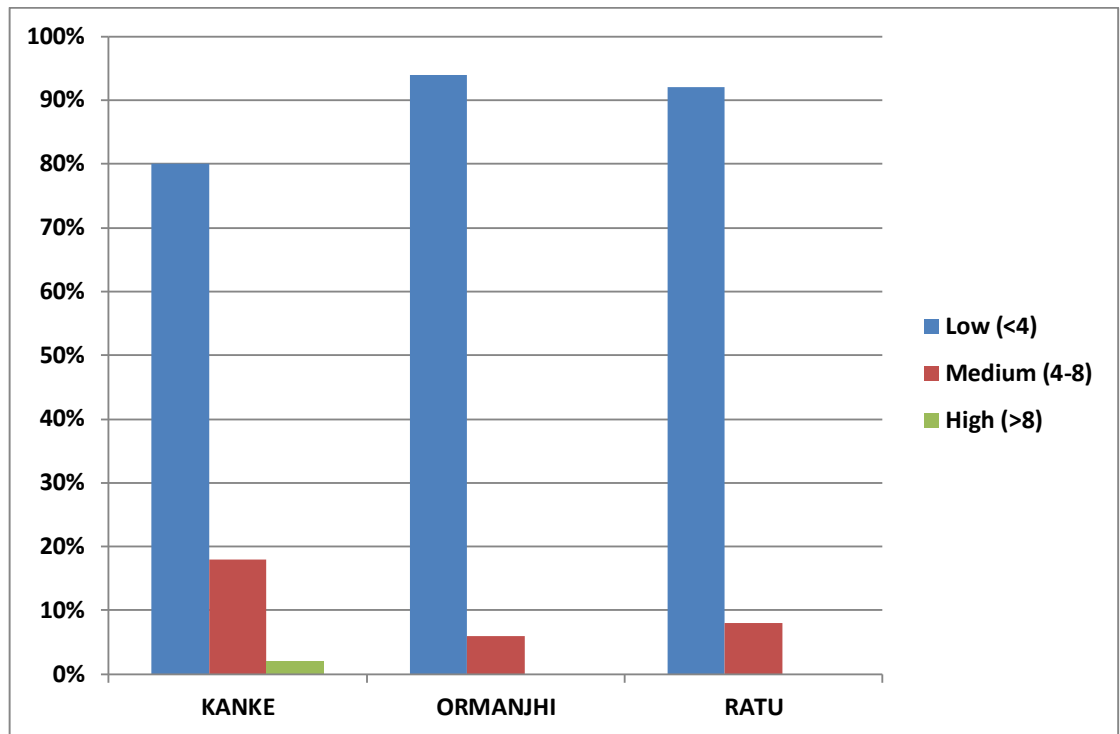


Figure7: Distribution of respondent on the basis of Mass - media exposure:

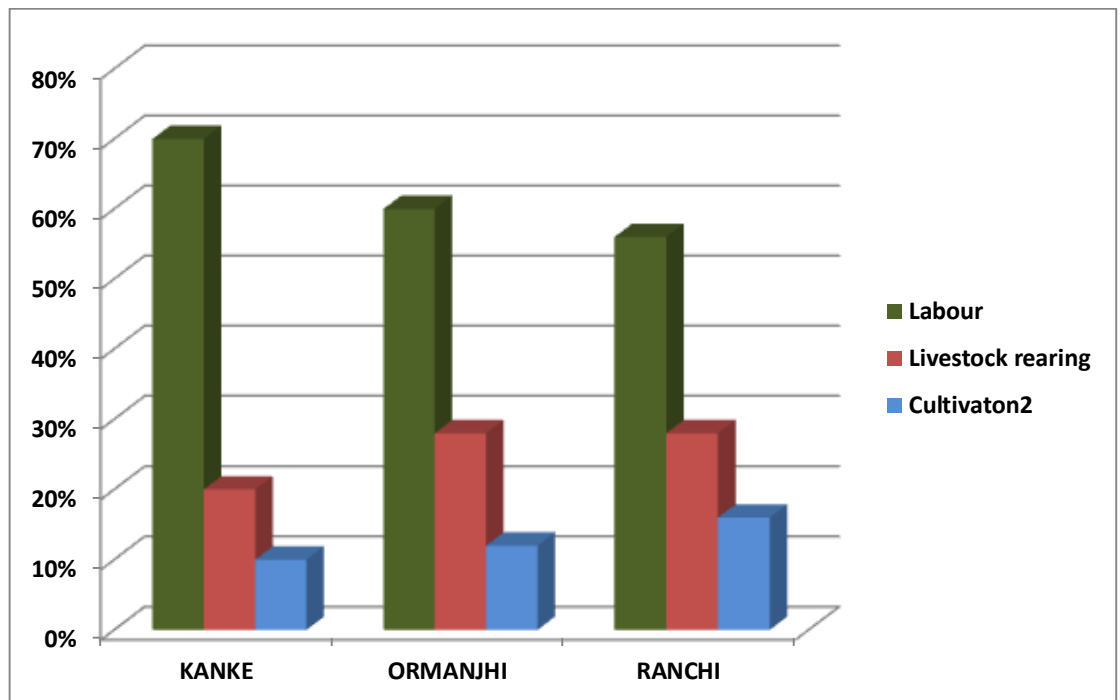


Figure 8: Distribution of respondent according to Primary occupation

were having medium mass media exposure. One respondent was found having high mass media exposure.

The present finding of Ranchi district is in line with that of Pandey (1996), Seth (2004) & Jha (2012).

4.2 Socio-economic variables

The variable primary occupation, secondary occupation, family income, land holding, herd size and socio-economic status had been included in the study which is discussed below.

4.2.1 Primary occupation

Distribution of respondent according to their primary occupation is presented in Table-7. The pooled values showed that majority of the respondent 62% were labourer, 25.33% were doing goat rearing and only 12.67% respondents were cultivator.

This finding not in the line with the finding of Srivastava (1982), Prasad (1987), Pandey (1996), Kumar and Sharma (1999), Seth (2004), Shweta (2010) & Jha (2012).

4.2.2 Secondary occupation

Table -7 shows distribution of respondents according to their secondary occupation. The majority of respondents 68% were goat farmers while 20.67% were doing labour and 11.33% respondent were doing cultivation. The finding of the study agrees with the observations made by Kerketta (2008) who concluded that majority of the respondent had labour & livestock rearing as secondary occupation.

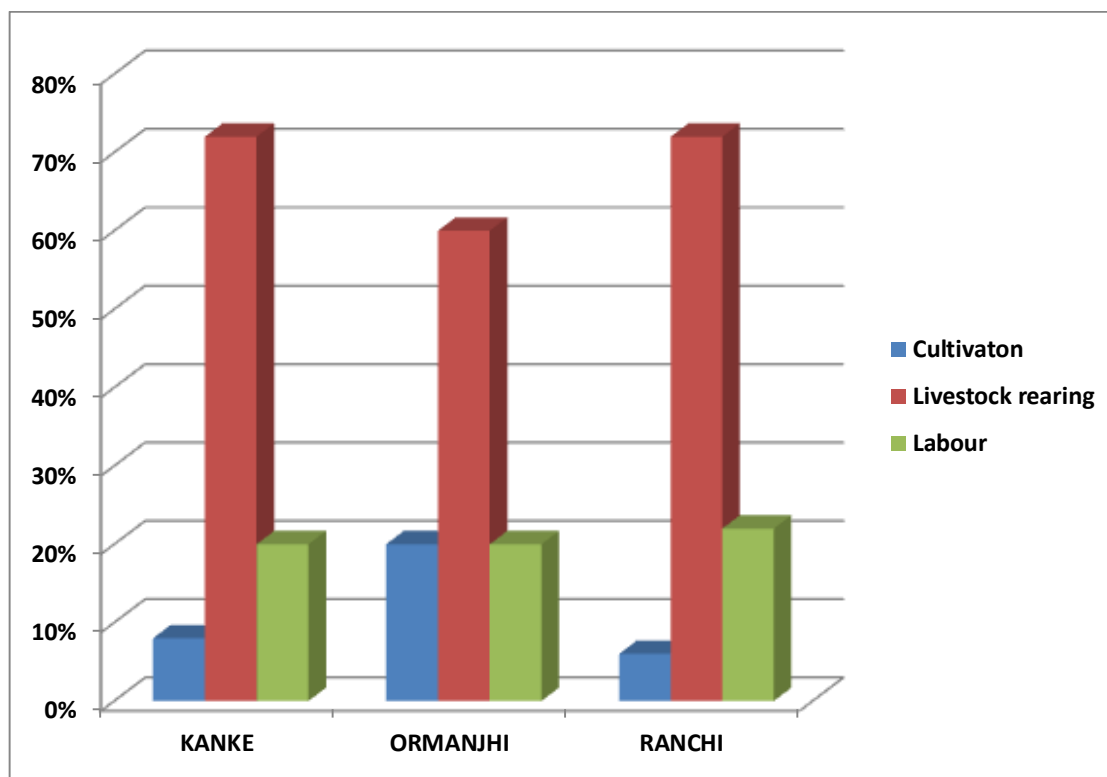


Figure 9: Distribution of respondent according to Secondary Occupation

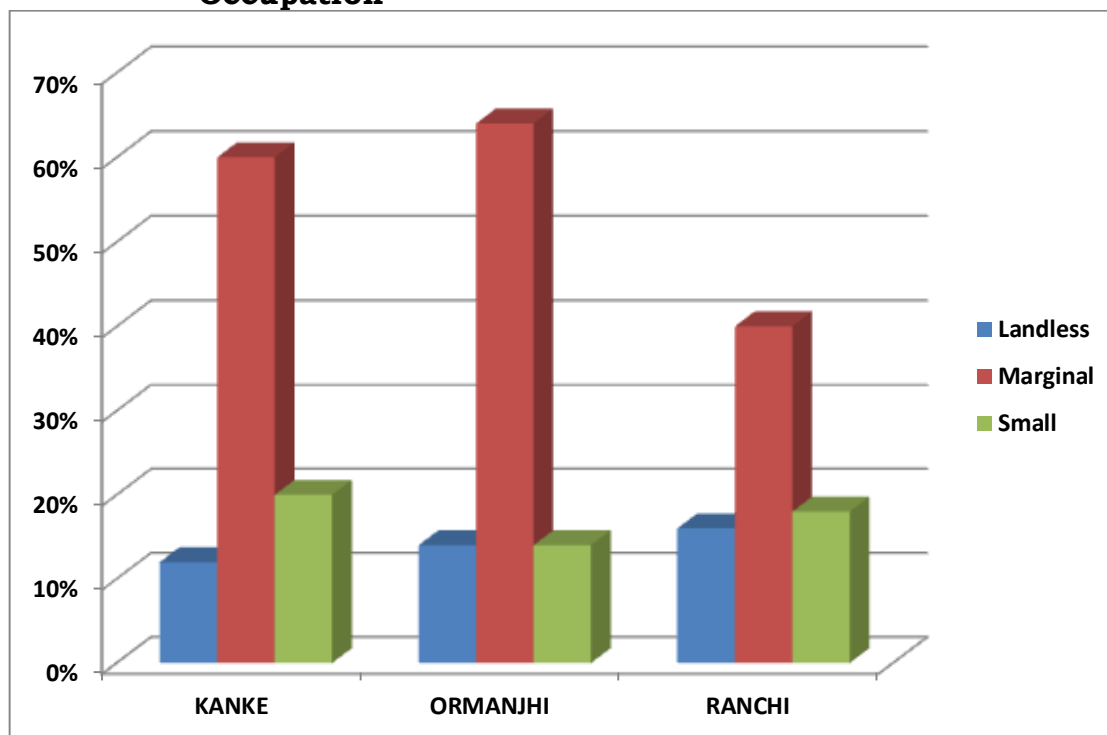


Figure 10: Distribution of respondent according to Land holding

Table – 7: Distribution of respondents on the basis of socio-economic characteristics

Sl. No.	Variables		KANKE		ORMANJHI		RATU		Pooled	
			f	%	f	%	f	%	f	%
1	Primary Occupation	labourer	35	70.00	30	60.00	28	56.00	93	62.00
		Livestock rearing	10	20.00	14	28.00	14	28.00	38	25.33
		Cultivation	5	10.00	6	12.00	8	16.00	19	12.67
	Total		50	100.00	50	100.00	50	100.00	150	100.00
2	Secondary Occupation	Cultivation	4	8.00	10	20.00	3	6.00	17	11.33
		Livestock rearing	36	72.00	30	60.00	36	72.00	102	68.00
		Labourer	10	20.00	10	20.00	11	22.00	31	20.67
	Total		50	100.00	50	100.00	50	100.00	150	100.00
3	Land holding	Landless	10	12.00	11	14.00	21	16.00	42	28.00
		Marginal	30	60.00	32	64.00	20	40.00	82	54.67
		Small	10	20.00	7	14.00	9	18.00	26	17.33
	Total		50	100.00	50	100.00	50	100.00	150	100.00
4	Herd size	Small	36	72.00	41	82.00	40	80.00	117	78.00
		Medium	12	24.00	8	16.00	9	18.00	29	19.33
		Large	2	4.00	1	2.00	1	2.00	4	14.00
	Total		50	100.00	50	100.00	50	100.00	150	100.00
5	Socio economic status	Low	15	30.00	16	32.00	5	10.00	36	24.00
		Medium	35	70.00	33	66.00	44	88.00	112	74.67
		High	0	0.00	1	2.00	1	2.00	2	1.33
	Total		50	100.00	50	100.00	50	100.00	150	100.00
6	Family income (Rs.)per month	<1000	21	42.00	20	40.00	17	34.00	58	38.67
		1000-2000	25	50.00	22	44.00	23	46.00	70	46.67
		2000-3000	3	6.00	6	12.00	8	16.00	17	11.33
		3000-4000	1	2.00	2	4.00	2	4.00	5	3.33
	Total		50	100.00	50	100.00	50	100.00	150	100.00

Table – 8: Average socio – economic characteristics along with standard deviation and f-value

Sl. No.	Variables	KANKE	ORMANJHI	RATU	F – value
		Mean±S.D.	Mean±S.D.	Mean±S.D.	
1	Primary Occupation	1.4±0.09	1.52±0.10	1.60±0.11	1.00
2	Secondary Occupation	2.12±0.07	2.00±0.09	2.1±0.07	1.11
3	Land holding	2.08±0.11	2.16±0.11	2.50±0.15	3.13
4	Herd size	1.9±0.09	2.02±0.08	1.92±0.07	2.00
5	Socio economic status	40.98±1.88	33.14±1.39	37.58±0.96	7.26
7	Family income	1433±43.08	1406±40.58	1377±41.56	0.45
8	Knowledge level	22.1±0.98	22.74±1.68	22.02±1.35	1.08
9	Adoption	1.34±0.13	1.44±0.16	1.20±0.17	0.58

4.2.3 Land holding

Table -7 shows distribution of respondent according to their land holding .In present study majority of respondent 54.67% were marginal farmer, 28% were landless and 17.33% were small farmers.

Thus it could be inferred that majority of respondent were marginal & small farmers. This is in line with the observations made by Kumar (1992), Mishra (1994), Seth (2004) who reported marginal farmers possessing 2.65 to 3.61 acres of land in the adopted village.

4.2.4 Herd size

Table -7 shows distribution of respondent according to their herd size. The table shows that majority of respondent 78% had small, 19.33% had medium and 14% had large herd size. Average herd size in Kanke was 1.9±0.09, Ormanjhi 2.02±0.08 & Ratu 1.92±0.07.

This finding get supports from Srivastava (1982) who observed that the average herd size was small in the study area.

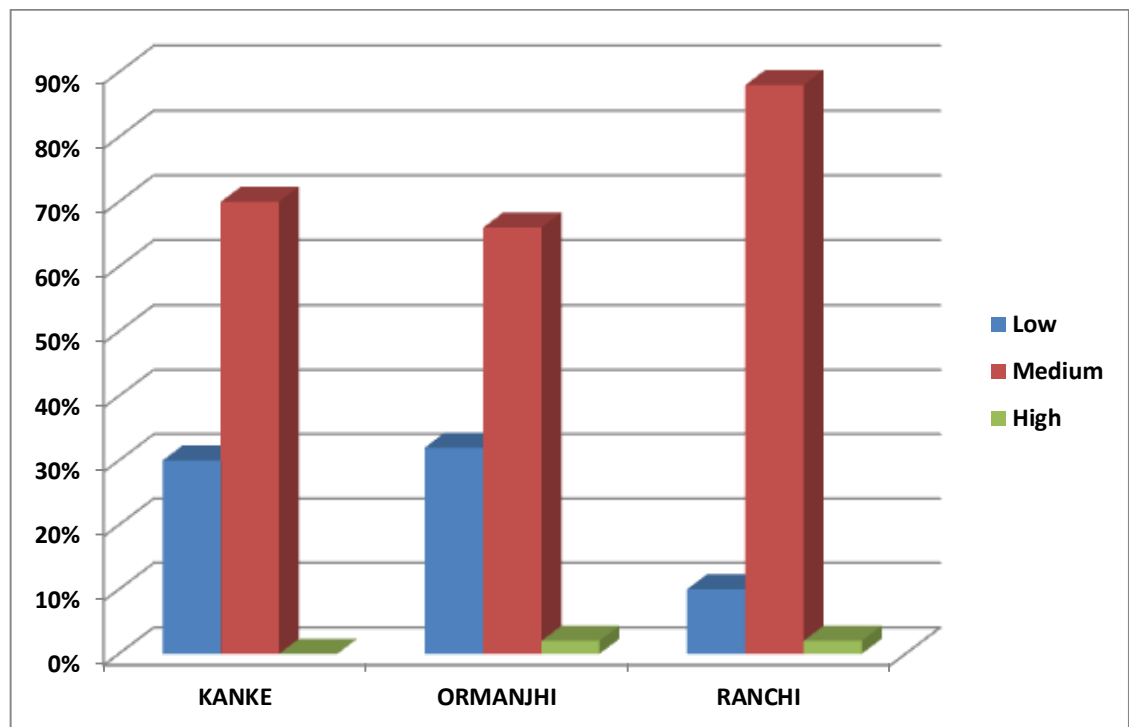


Figure 11: Distribution of respondent according to Socio - economic status

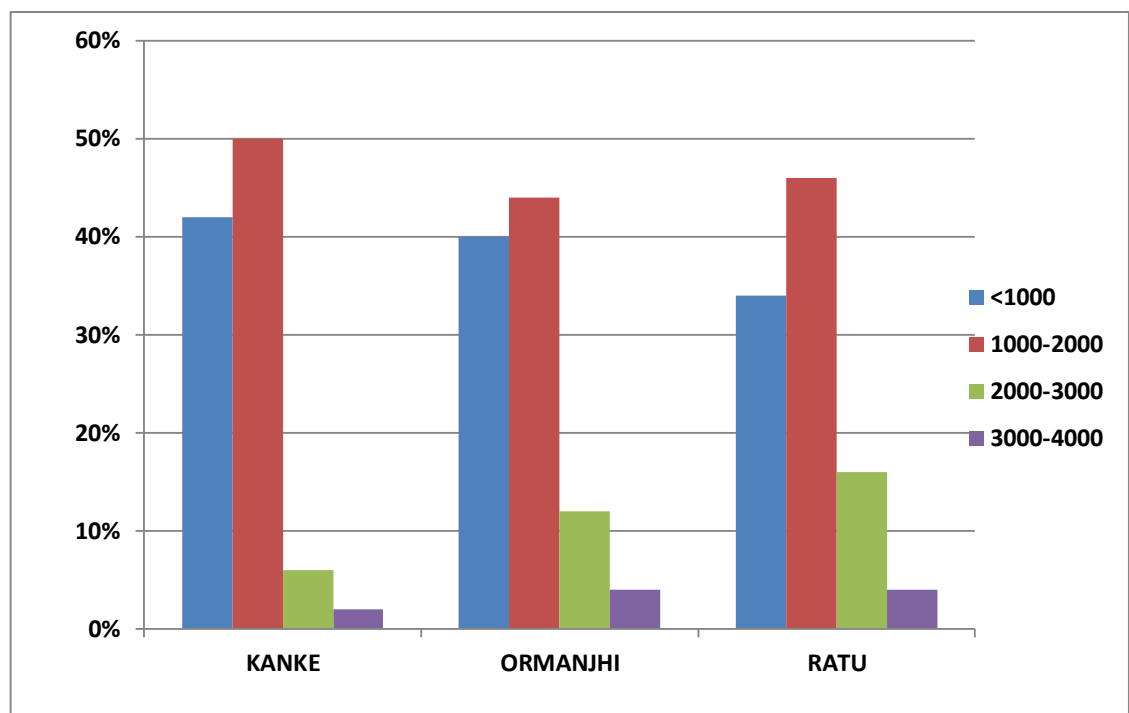


Figure 12: Distribution of respondent according to Family income (Rs.) per month

4.2.5 Socio-economic status

A distribution of respondent according to their socio-economic status has been presented in the Table -7. The pooled value showed that 74.67% of respondent were having medium socio-economic status, 24% and 1.33% were having low and high socio-economic status respectively.

This finding get supports from Vidyarthi (2003) who reported that most of the goat owners were fell into category of low to medium socio economics status.

4.2.6 Family income

Table-7 shows distribution of respondent according to their monthly family income of the respondent. Most of respondents were having their monthly family income in between Rs. 1000-2000 per month while 11.33% & 3.33% of the respondent were having family income in between Rs.2000-3000 & Rs.3000-4000 per month respectively. None of respondents were having family income above Rs. 4000 per month.

4.3 Existing goat farming practices

Under this dimension, an attempt has been made to study in depth the various aspect of goat farming practices followed by goat farmers. The results are presented under following subheads:

1. Breeding practices

2. Feeding practices

3. Health care & disease control

4. Management practices

4.3.1 Breeding practices

4.3.1.1. Method of breeding

Table – 9: Distribution of respondents on the basis of the existing goat farming practices - Method of breeding

Breeding method	KANKE		ORMANJHI		RATU		Pooled	
	f	%	f	%	f	%	f	%
Natural service with improved buck	10	20.00	11	22.00	9	18.00	30	20.00
Natural service with local buck	40	80.00	41	82.00	39	78.00	120	80.00
Total	50	100.00	50	100.00	50	100.00	150	100.00

The data presented in the Table - 9 reveals that breeding practices followed by goat farmers. The pooled value shows that 20% of respondent breeding their doe with improved buck by natural service whereas 80% respondent were breeding their doe with local buck.

The finding clearly revealed that majority of goat owners were getting their does serviced naturally with local buck. It might be due to the fact that improved bucks are not available in the villages.

4.3.1.2 Identification of heat

Table 10: Distribution of respondents on the basis of the existing goat farming practices - Identification of heat

Identification of heat	KANKE		ORMANJHI		RATU		Pooled	
	f	%	f	%	f	%	f	%
Yes	50	100.00	48	96.00	50	100.00	148	98.67
No	0	0.00	2	4.00	0	0.00	2	1.33
Total	50	100.00	50	100.00	50	100.00	150	100.00

Table -10 refers that 98.67% of respondent could identify the goat in heat.

It was also reported by the respondent that they could identify the doe in heat by observing symptoms like bleating, mucus discharge from vagina, mounting on other goats and tail wagging.

4.3.1.3 Best season for kidding

Table -11 shows that majority of respondent 89.33% opined winter as best season of kidding, where as only 2.67% & 8% respondent opined rainy and summer as best season of kidding.

Table 11: Distribution of respondents on the basis of the existing goat farming practices-Best season of kidding

Season	KANKE		ORMANJHI		RATU		Pooled	
	f	%	f	%	f	%	f	%
Winter	46	92.00	45	90.00	43	86.00	134	89.33
Rainy	0	0.00	2	4.00	2	4.00	4	2.67
Summer	4	8.00	3	6.00	5	10.00	12	8.00
Total	50	100.00	50	100.00	50	100.00	150	100.00

Preference of winter season of kidding might be due to the fact that feed & fodder are plenty available during winter season.

4.3.2 Feeding practices

4.3.2.1 Feeding of green fodder by cut and carry method

It is very clear from table-12 that only 16% of the respondents were feeding green feed by cut & carry method to their goat. Majority of respondents that is 84% were not feeding by cut and carry method.

Table-12: Distribution of respondents on the basis of the existing goat farming practices - Feeding of green fodder by cut and carry method

Feeding of green fodder by cut & carry method	KANKE		ORMANJHI		RATU		POOLED	
	f	%	f	%	f	%	f	%
Yes	10	20.00	6	12.00	8	16.00	24	16.00
No	40	80.00	44	88.00	42	82.00	126	84.00
Total	50	100.00	50	100.00	50	100.00	150	100.00

Table-13: Distribution of respondents on the basis of the existing goat farming practices - Let loose for grazing

Let loose for grazing	KANKE		ORMANJHI		RATU		Pooled	
	f	%	f	%	f	%	f	%
Yes	49	98.00	50	100.00	45	90.00	144	96.00
No	1	2.00	0	0.00	5	10.00	6	4.00
Total	50	100.00	50	100.00	50	100.00	150	100.00

It is very clear from table- 13 that 96% respondents were feeding of green fodder by let loose for grazing to their goat.

It is apparent that bringing fodder for goat was not commonly practised in study area. It is logical too, considering the innate behaviour of goats, who do not like to eat the cut grass, rather they prefer to browse from the shrubs, bushes & small tree.

4.3.2.2 Feeding of tree leaves

It is very clear from this table-14 that 36.67% respondent were providing tree leaves for feeding to their goats. The respondents were lopping tree leaves of Kathal, Gular, Aam, Peeple and Mahua for feeding.

Table-14: Distribution of respondents on the basis of the existing goat farming practices - Feeding of tree leaves

Feeding of tree leaves	KANKE		ORMANJHI		RATU		Pooled	
	f	%	f	%	f	%	f	%
Yes	22	44.00	18	36.00	15	30.00	55	36.67
No	28	56.00	32	64.00	35	70.00	95	63.33
Total	50	100.00	50	100.00	50	100.00	150	100.00

Similar finding was also reported by Pandey (1997) who observed that tribal and non tribal farmers of Chottanagpur plateau used to feed tree leaves to their goats. He further emphasized that strong extension support is needed to make the goat farmers aware about the benefits of some nutritious tree leaves such as Ardu, Siris, Sesbania etc, which are available in abundance in this region.

4.3.2.3 Feeding of concentrate mixture

Table-15 shows that only 4% respondents were feeding concentrate mixture to their goat.

Majority of the goat owners were not providing concentrate to the goat. Majority of them believed that animal can survive on grazing alone and there is no need of feeding concentrate. This might be due to the lack of knowledge about feeding concentrate mixture to animals and also because it is costly. Lack of training on utilization of locally available concentrate might be the other reason.

Table-15: Distribution of respondents on the basis of feeding the existing goat farming practices –Feeding of concentrate mixture

Feeding concentrate mixture	KANKE		ORMANJHI		RATU		Pooled	
	f	%	f	%	f	%	f	%
No	49	98.00	50	100.00	45	90.00	144	96.00
Yes	1	2.00	0	0.00	5	10.00	6	4.00
Total	50	100.00	50	100.00	50	100.00	150	100.00

4.3.2.4 Colostrum feeding to a new born kid.

Table-16 revealed that all respondents were feeding colostrum to new born kids.

Table-16: Distribution of respondents on the basis of the existing goat farming practices – colostrum feeding to a new born kid

Colostrum feeding to new born kids	KANKE		ORMANJHI		RATU		Pooled	
	f	%	f	%	f	%	f	%
Yes	50	100.00	49	98.00	50	100.00	149	99.33
No	0	0.00	1	2.00	0	0.00	1	0.67
Total	50	100.00	50	100.00	50	100.00	150	100.00

Feeding of colostrum to new born is highly required as it provides immunity against the diseases. It was heartening to note that all the goat owners were providing colostrum to the new born kid.

4.3.2.5 Let loose for grazing at the ages.

Table-17 reflects that majority of respondent 92.67% were allowing their kid for grazing at the age of 2 – 3 months.

Table-17: Distribution of respondents on the basis of the existing goat farming practices - let loose kid for grazing at the ages

Age of kid (months)	KANKE		ORMANJHI		RATU		Pooled	
	f	%	f	%	f	%	f	%
2-3	45	90.00	46	92.00	48	96.00	139	92.67
3-4	5	10.00	4	8.00	2	4.00	11	7.33
Total	50	100.00	50	100.00	50	100.00	150	100.00

4.3.3 Health care & disease control

Diseases generally prevalent among the goats as reported by the respondent were skin diseases, diarrhea, foot and mouth diseases and fracture. Some of the remedial measures taken up by the respondents are discussed below:

4.3.3.1 Method of treatment

Table-18 reveals 44.67% respondents were treating their animal by self indigenously, where 38% were treating by Bhagat and only 17.33% were treating their goats by veterinarians.

Table-18: Distribution of respondents on the basis of the existing goat farming practices -Method of treatment

Indigenous treatment of animal by	KANKE		ORMANJHI		RATU		Pooled	
	f	%	f	%	f	%	f	%
Self	24	48.00	18	36.00	25	50.00	67	44.67
Bhagat	8	16.00	31	62.00	18	36.00	57	38.00
Veterinarian	18	36.00	1	2.00	7	14.00	26	17.33
Total	50	100.00	50	100.00	50	100.00	150	100.00

It is evident from the table that majority of goat owners were treating their animal self. More use of indigenous medicine & dominance of local caste (Bhagat) is highlighted in many of the studies (Srivastava, 1982, Kokate 1984, Venkata Subramanian and Fulzele (1994), Sagar (1995) and Pandey (1996).

4.3.3.2 Treatment of Diarrhoea

Table-19 shows that majority of respondents 55.33% were using Bamboo leaves with seed of Saal in case of diarrhea, 26.07% were using feeding of solution of Chikni Miti, 13.33% of respondent were using Putkal leaves or Gular leaves, whereas 4.67% of respondents were feeding roots of Ranured as fed in case of diarrhea.

Use of Chikni Mitti & root of Ranured in case of diarrhea is also reported by Pandey (1996). The Chikni mitti is supposed to produce as astringent action because it binds the stomach. The Ranured supposed to contain pelesin which acts as an effective astringent. (Singh *et.al.*1994).

Table-19: Distribution of respondents on the basis of the existing goat farming practices – Treatment of Diarrhea

Traditional treatment	KANKE		ORMANJHI		RATU		Pooled	
	f	%	f	%	f	%	f	%
Bamboo leaves with seed of saal	28	56.00	30	60.00	25	50.00	83	55.33
Feeding solution of chikni miti	14	28.00	11	22.00	15	30.00	40	26.67
Putkal leaves or Gular leaves	6	12.00	6	12.00	8	16.00	20	13.33
Roots of Ranured are fed	2	4.00	3	6.00	2	4.00	7	4.67
Total	50	100.00	50	100.00	50	100.00	150	100.00

4.3.3.3 Treatment of Foot and Mouth disease (F.M.D.)

Table-20 reveals that 44.67% respondents were doing application of Karanj oil for treatment of foot and mouth disease, 48% & 7.33% respondents were allowed to run on sand and washing with hot water and with bark of Farhar respectively.

Use of Karanj oil, and bark of Farhar was also reported by Pandey (1996). Allowing the animal to run on sand and mud was a common practice in tribal area for FMD cases as reported by De (1994), Khatik (1994) and Pandey (1996).

Table-20: Distribution of respondents on the basis of knowledge of the existing goat farming practices - Foot and mouth disease (F.M.D)

Traditional treatment	KANKE		ORMANJHI		RATU		Pooled	
	f	%	F	%	f	%	f	%
Application of karanj oil treatment	18	36.00	24	48.00	25	50.00	67	44.67
Running on sand and washing with hot water	24	48.00	24	48.00	24	48.00	72	48.00
Bark of farhar	8	16.00	2	4.00	1	2.00	11	7.33
Total	50	100.00	50	100	50	100.00	150	100.00

4.3.3.4 Treatment of fracture

Table - 21 refers that majority of respondents 94.67% were using bark of Harjaura in fracture or pojo with bamboo splint in treatment of fracture.

Use of Harjaura in fracture cases was also reported by Srivastava (1982) and Pandey (1996).

Table-21: Distribution of respondents on the basis of the existing goat farming practices – Treatment of fracture

Traditional treatment	KANKE		ORMANJHI		RATU		Pooled	
	f	%	F	%	f	%	f	%
Bark of Harjauara/ pojo mixed with bamboo splints								
Yes	48	96.00	49	98.00	45	90.00	142	94.67
No	2	4.00	1	2.00	5	10.00	8	5.33
Total	50	100.00	50	100.00	100	100.00	150	100.00

4.3.3.5 Vaccination against contagious disease

Table-22: Distribution of respondents on the basis of the existing goat farming practices - Vaccination against contagious diseases

Vaccination	KANKE		ORMANJHI		RATU		Pooled	
	f	%	f	%	f	%	f	%
Yes	10	20.00	0	0.00	8	16.00	18	12.00
No	40	80.00	50	100.00	42	84.00	140	88.00
Total	50	100.00	50	100.00	100	100.00	150	100.00

Table-22 reveals the distribution of respondents on the basis of vaccination against contagious diseases. Majority of the respondents 88% were not vaccinating their goat for control of contagious diseases.

It is quite disheartening to know that majority of goat owners were not vaccinating their goat against contagious diseases and particularly for Enterotoxaemia. Lack of knowledge about the benefits

of vaccinating the goat with Enterotoxaemia vaccine could be the probable reason for it.

Similar observation was also made by Sivanarayana and Reddy (1995) and Pandey (1996).

4.3.3.6 Control of ectoparasite

Table-23 shows that for control of ecto-parasite, 60.67% of respondents were using Gandhak heated in Karanj oil, while 33.33%, 5.33% & 0.67% of respondents were using dung ash, Kusum oil or Mahua oil and Gamexine malathion respectively.

Table-23: Distribution of respondents on the basis of the existing goat farming practices - Control of ectoparasite

Control of ectoparasite	KANKE		ORMANJHI		RATU		Pooled	
	f	%	F	%	f	%	f	%
Gamexene malathion, etc.	1	2.00	0	0.00	0	0.00	1	0.67
Dung ash	18	36.00	18	36.00	14	28.00	50	33.33
Gundhak heated in Karanj oil	26	52.00	30	60.00	35	70.00	91	60.67
Kusum oil or mahua oil	5	10.00	2	4.00	1	2.00	8	5.33
Total	50	100.00	50	100.00	50	100.00	150	100.00

It is apparent from the table-23 that use of Gandhak heated in Karanj oil was most popular way to tackle the ecto-parasite problem. Application of Karanj oil to get rid of ecto-parasite was also reported by Pandey (1996).

4.3.4 Management practices

4.3.4.1 Cleaning utensils of animal use

Table-24: Distribution of respondents on the basis of the existing goat farming practices - Cleaning utensils of animal use

Cleaning utensils	KANKE		ORMANJHI		RATU		Pooled	
	f	%	F	%	f	%	f	%
Yes	5	10.00	2	4.00	1	2.00	8	5.33
No	45	90.00	48	96.00	49	98.00	142	94.67
Total	50	100.00	50	100.00	50	100.00	150	100.00

Table-24 shows that 94.67% of respondent were not cleaning utensils properly. Only 5.33% were cleaning utensils.

The practice of cleaning of utensil was not reported by majority of goat owners.

4.3.4.2 Provision of bedding to kid

Table-25: Distribution of respondents on the basis of the existing goat farming practices - Bedding to the kid

Provide bedding to the kids	KANKE		ORMANJHI		RATU		Pooled	
	f	%	F	%	f	%	f	%
Yes	50	100.00	49	98.00	48	96.00	147	98.00
No	0	0.00	1	2.00	2	4.00	3	2.00
Total	50	100.00	50	100.00	50	100.00	150	100.00

Table-25 shows that most of the respondents 98% were providing bedding to the kids.

The respondents generally provide bedding to the kids in the winter season. Straw was the most widely used bedding material however some of the respondents also provide gunny bag.

4.3.4.3 Castration of male kids

Table-26: Distribution of respondents on the basis of the existing goat farming practices - Castration of male kid

Castration of male kids	KANKE		ORMANJHI		RATU		Pooled	
	f	%	F	%	f	%	f	%
Yes	49	98.00	45	90.00	46	92.00	140	93.33
No	1	2	5	10.00	4	8.00	10	6.67
Total	50	100.00	50	100.00	50	100.00	150	100.00

Table-26 shows that castration of male kids was followed by 93.33% of goat farmers by indigenous method.

The respondents believed that castrated male develops quickly and also fetches a good price as compared to uncastrated male.

4.3.4.4 Age of castration

Table-27: Distribution of respondents on the basis of the existing goat farming practices - Age of castration

Age of castration	KANKE		ORMANJHI		RATU		Pooled	
	f	%	f	%	f	%	f	%
2 - 3 months	40	80.00	35	70.00	38	76.00	113	75.33
3 - 4 months	8	16.00	13	26.00	11	22.00	32	21.33
4 - 5 months	2	4.00	2	4.00	1	2.00	5	3.33
Total	50	100.00	50	100.00	50	100.00	150	100.00

Table-27 reveals that majority of the respondent 75.33% were castrating their male kid at the age of 2-3 months, while 21.33% and 3.33% of respondent were castrating their male kid at the age of 3-4 months and 4-5 months respectively.

4.3.4.5 Method of castration

Table-28 reveals that 84.67% respondents were castrating their male kids by indigenous method, only 15.37% respondents were castrating by Burdizzo castration.

Table-28: Distribution of respondents on the basis of the existing goat farming practices - Method of castration

Method of castration	KANKE		ORMANJHI		RATU		Pooled	
	f	%	F	%	f	%	f	%
Indigenous	40	80.00	44	88.00	43	86.00	127	84.67
Burdizzo	10	20.00	6	12.00	7	14.00	23	15.37
Total	50	100.00	50	100.00	50	100.00	150	100.00

Castration was mainly done indigenously. There was a practice of using two strong piece of wood and made a cross. The spermatic cord is placed in between the upper part of the cross wood, and pressure is exerted on the lower part. This is a common practice of castrating the animals as reported by Pandey (1996).

4.3.4.6 De-worming of goats

Table-29 refers that the majority 84% respondents were not de-worming their goats. Only 16% of respondents were de-worming their goats.

Table-29: Distribution of respondents according to existing goat farming practices–De-worming of goat.

Deworming	KANKE		ORMANJHI		RATU		Pooled	
	f	%	F	%	f	%	f	%
Yes	15	30.00	1	2.00	8	16.00	24	16.00
No	35	70.00	49	98.00	42	84.00	126	84.00
Total	50	100.00	50	100.00	50	100.00	150	100.00

The de-worming of goat is highly required in this region because the goat suffered from heavy parasitic infestation. But, probably the lack of knowledge about benefits of de-worming and non availability of de-worming medicines, some of the respondents were reported that they feed Palas seed to kill the worm.

4.3.4.7 Disposal of placenta

Table-30: Distribution of respondents on the basis of the existing goat farming practices–Disposal of placenta.

Disposal of placenta	KANKE		ORMANJHI		RATU		Pooled	
	f	%	F	%	f	%	f	%
Burried	48	96.00	49	98.00	47	94.00	144	96.00
Burnt	2	4.00	1	2.00	3	6.00	6	4.00
Total	50	100.00	50	100.00	50	100.00	150	100.00

Regarding the disposal of placenta, Table-30 reveals that majority of respondents that is 96% were disposing the placenta by burying and only 4% by burning.

The farmers were aware of the fact of burying the placenta. Similar observation was also made by Kokate (1984) & Pandey (1996).

4.3.4.8 Housing

Table-31: Distribution of respondents according to the existing goat farming practices - Housing

Housing	KANKE		ORMANJHI		RATU		Pooled	
	f	%	f	%	f	%	f	%
Loose/Open	2	4.00	4	8.00	8	16.00	14	9.33
Closed /Shed	48	96.00	46	92.00	42	84.00	136	90.67
Total	50	100.00	50	100 .00	50	100.00	150	100.00

Table-31 reveals that majority of respondents 90.67% kept their goats in shed.

The goat farmers seen to be wise enough to keep goats in their home at night. In fact, the goat is treated as member of the family. Only few respondents were found built special sheds to keep the goats.

4.4. Extent of adoption of scientific goat husbandry practices

Adoption has been taken as the degree upto which different goat farming practices were adopted by farmers of selected block on temporary or permanent basis. All improved goat farming practices like breeding, feeding, management and disease control were selected.

The results pertaining to each practice aforesaid are given in Table-32. A close look to the Table-32 which deals with the distribution of farmers according to improved breeding, feeding, management and disease control practices of goat farming. It was found that 75.33% respondents were feeding colostrum to new born

kid within 30 minutes which Ranks Ist , 68.67% of respondents were castrating male kid within 2 months of age & adoption of this practice ranks IInd. 20% of respondents were using crossing breeding of local doe with improved bucks & this practice ranks IIIrd.

Table-32: Extent of adoption ranking of selected improved goat husbandry practices of the goat farmers

Sl. No.	Particulars	KANKE		ORMANJHI		RATU		Pooled		Ranking
		Adopted		Adopted		Adopted		Adopted		
		f	%	f	%	f	%	f	%	
1	Colostrum feeding to new born kids within 30 minutes.	40	80.00	35	70.00	38	76.00	113	75.33	I
2	Castration of young male within two months of age.	35	70.00	30	60.00	38	76.00	103	68.67	II
3	Cross breeding of local doe with improved bucks	18	36.00	2	4.00	9	18.00	29	20.00	III
4	Spraying of sheds with any disinfectants.	6	12.00	1	2.00	0	0.00	7	4.67	IV
5	Deworming of kids.	5	10.00	0	0.00	0	0.00	5	3.33	V
6	Supplement feeding with concentrate mixture besides 4-5 hrs. grazing	1	2.00	0	0.00	0	0.00	1	0.67	VI
7	Prevention of pregnant doe from grazing during last 15 days and provision of extra ration.	0	0.00	0	00.00	0	0.00	0	0.00	VII
8	Dipping at every 3 months	0	0.00	0	0.00	0	0.00	0	0.00	VII

Spraying of sheds with disinfectant ranks IVth as only 4.67% respondent were followed it. 3.33% of respondents were de-worming their kid & it ranks Vth, 0.67% of respondents were providing

supplement feeding with concentrate mixture beside 4-5 hours grazing & this practice ranks VIth. None of the respondent was dipping at every 3 months & prevention of pregnant doe from grazing during last 15 days & provision of extra ration.

4.4.1 Distribution of respondents on the basis of overall adoption level

Table-33 reveals that majority of the respondents that is 90% belong to Low (0-3) adoption level; none of the respondent belong to High (7-10) adoption level and only 10% of respondent belong to medium adoption level (4-6).

Table-33: Distribution of respondent on the basis of overall adoption level

Adoption	KANKE		ORMANJHI		RATU		Pooled	
	f	%	f	%	f	%	f	%
Low(0-3)	40	80.00	48	96.00	47	94.00	135	90 .00
Medium(4-6)	10	20.00	2	4 .00	3	6 .00	15	10 .00
High (7-10)	0	00.00	0	0.00	0	0.00	0	00.00
Total	50	100 .00	50	100 .00	50	100 .00	150	100 .00

4.5 Relationship of socio-personal and socio-economic characteristics with adoption of scientific goat farming practices

Zero order correlation coefficient (values) was calculated to ascertain the relationship between some of the selected socio-personal and socio-economic variables on the adoption of improved farming practices by the respondents of selected blocks of Ranchi.

The results are presented in Table-34 pin point that adoption of improved goat farming practices was positively and significantly associated their age, education, social participation, extension contact, mass media exposure, training orientation, socio economic

status, herd size, income from goat, knowledge level of improved goat rearing practices and income from goat at 5% level of significance.

Table-34: Relationship of socio-personal and socio-economic characteristics with adoption of scientific goat rearing

Sl. No.	Variables	Respondent
		R
1	Age	0.289*
2	Education	0.301*
3	Type of family	0.240 NS
4	Size of family	0.148 NS
5	Extension contact	0.323 *
6	Mass media exposure	0.348*
7	Social participation	0.297 *
8	Training orientation	0.355*
9	Primary Occupation	0.326 *
10	Secondary Occupation	0.329 *
11	Family income	0.309 *
12	Socio economic status	0.351 *
13	Land holding	0.215NS
14	Herd size	0.335*
15	Income from goat	0.337*
16	Knowledge level of improved goat rearing practices	0.367*
* P<0.05 ** p<0.01 NS non-significant		

However, a positive but non-significant relationship was observed with type of family, size of family and land holding.

It was found that education had a significant effect on adoption level of the farmers. It can be inferred that higher education of the respondents resulted in better adoption. This finding is in line with that of Pandey (1996). Social participation had a significant effect on adoption level of the farmers. Extension contact, mass media exposure had a significant effect on adoption of the farmers. It can be informed from the present findings that the respondents with higher extension contact showed more inclination for adoption of improved goat farming practices. The extension contact being maintained by extension workers, scientists of KVK, and the Deptt. of A.H has definitely helped in increasing the adoption level of the farmers. Extension contact not only brings awareness among farmers but also help them to learn useful and profitable goat farming practices, besides helping in acquiring new knowledge leading to adoption.

The present finding was supported by Voll (1982), Kaushik (1988), Joseph (1987) and Mahipal and Kherde(1991) who found that contacts with extension agents and urban centers were significantly and positively related to adoption of recommended farm practices. It also agrees with Sagar and Dohare (2000) who reported that correlation coefficient between extension participation of goat farmers were positively and significantly correlated with the adoption of health care in goats by all farmers. Availability of technical input and training orientation had significant effect on adoption level of the farmers.

We also observe positive and significant relationship between socio economic status and the adoption of improved goat rearing practices. This may be because the farmers having higher socio

economic status are economically well up to adopt the improved practices. The farmers adopted the improved goat rearing practices only for the economic gains and higher the economic gain the much favorable attitude towards improved goat farming practices. This finding is in accordance with the earlier observations made by Mahipal and Kherde (1991).

The finding also revealed that adoption of improved goat rearing practices was positively and significantly associated with livestock-holding. The more number of animals might have motivated the farmers to adopt better practices. This effects also suggests the farmers who are keeping large number of animals as mainly or solely depends on goat farming for their livelihood, choose them to adopt more number of practices.

This finding is akin with the findings of Mahipal (1983), Mahipal and Kherde (1991) and Shirshat *et.al.* (1993) who reported that herd size was positively and significantly correlated with overall adoption of improved practices. This also confirms to the findings of Sagar and Dohare (2000) who indicated that flock size was positively and significantly correlated with the adoption of health care in goats.

The knowledge level of the respondents and adoption of improved goat farming practices was found to be significantly associated with each other. It is quite obvious that until or unless a person has knowledge of any particular practice, he cannot adopt the practices; as the knowledge is the first stage of adoption process. The finding is in line with that of Cruz *et.al.*(1979).

Knowledge of respondents about improved goat farming practices

Knowledge of the respondents regarding improved goat farming practices was ascertained with the help of a scale specially developed for this purpose by Rajkamal (1993). The knowledge index for individual respondent was calculated and the respondent's knowledge was categorized into three group namely low, medium and high. Data pertaining to the knowledge level of the respondents are presented in Table 35 and 36.

The result received from different selected blocks has been presented in Table-35. The data points that 80% of the respondents were having knowledge about the signs of heat in a doe by identifying swelling valva, 84.67% by identifying mucus discharge from vagina. 30% of the respondents were found having knowledge of duration of heat period (14-48 hrs.). 84-67% of the respondents were found the most appropriate time for detection of heat (morning). 63.33% of the respondents were found the doe repeat its heat cycle (after 18-21 days). 66-67% of the respondents were found the age of first mating of a doe (8-12 months). 40% of the respondents were found reasons for a doe not coming to heat even after puberty due to nutritional deficiency and 50% of the respondents were found due to reproductive disorders. 50% of the respondents were found selecting a breeding buck it should be masculine. 53% of the respondents were found posses good libido 53% and free from disease.

Table-35: Knowledge level of respondents about improved goat farming practices

Sl. No.	Statements/Questions	KANKE		ORMANJHI		RATU		Pooled	
		f	%	f	%	f	%	f	%
A	Breeding								
What are the signs of heat in a doe									
1	Swollen vulva	45	90.00	35	70.00	40	80.00	120	80.00
2	Mucus discharge from vagina	45	90.00	40	80.00	42	84.00	127	84.67
3	What is the duration of heat period? (14-48 hr)	10	20.00	0	0.00	5	10.00	15	30.00
4	What is the most Appropriate time for detection of heat?	45	90.00	40	80.00	42	84.00	127	84.67
5	After how many days the doe repeat its heat cycle? (18-21 days)	35	70.00	28	56.00	32	64.00	95	63.33
6	What is the age of first mating of a doe?	38	76.00	32	64.00	30	60.00	100	66.67
	What are the reasons for the doe not coming to heat even after puberty?								
7	Nutritional deficiency	20	40.00	22	44.00	18	36.00	60	40.00
8	Reproductive disorders	25	50.00	30	60.00	20	40.00	75	50.00
	While selecting a breeding buck it should be								
9	Masculine	36	72.00	30	60.00	24	48.00	90	60.00
10	Possess good libido	30	60.00	25	50.00	25	50.00	80	53.33
11	Free from diseases	40	80.00	35	70.00	45	90.00	120	80.00
Disease control									

Tab. No. – 35 cont.....

How would you identify Goat Pox?									
1	Pock lesions on the udder	40	80.00	38	76.00	32	64.00	110	73.33
2	Lameness	42	84.00	40	80.00	43	86.00	125	83.33
How would you control Goat Pox?									
3	Hygienic milking practices	10	20.00	0	0.00	5	10.00	15	10.00
How would you identify foot rot?									
4	Lameness	36	72.00	40	80.00	28	56.00	104	69.33
5	Wound in between hooves	30	60.00	35	70.00	32	64.00	97	64.67
How would you prevent foot rot?									
6	Hygienic management of goat pen	33	66.00	20	40.00	25	50.00	78	52.00
7	Trimming the hooves periodically	35	70.00	10	20.00	18	36.00	63	42.00
How would you identify mastitis?									
8	Swelling of the udder	48	96.00	42	84.00	45	90.00	135	90.00
9	Change in color and consistency of milk	17	34.00	15	30.00	12	24.00	44	29.33
What are the symptoms of H. S.?									
10	High fever	8	16.00	5	10.00	6	12	19	12.67
11	Diarrhoea	16	32.00	10	20.00	12	24	38	25.33
How can you control H.S.?									
12	By vaccination	8	16.00	5	10.00	3	6	16	10.66
13	Vaccinating goats is a measure of giving protection from diseases	2	4.00	0	0.00	0	0	2	1.33
De-worming and control of ectoparasites									
What are the symptoms of worm infestation in goats?									

Tab. No. – 35 cont.....

1.	Frequent diarrhoea	45	90.00	48	96.00	42	84.00	135	90.00
2.	Stunted growth	40	80.00	35	70.00	31	62.00	106	70.67
	What is the schedule of deworming in goats?								
3.	First 3 months	5	10.00	2	4.00	0	0.00	7	4.67
4.	3 months to 1 year	5	10.00	2	4.00	0	0.00	7	4.67
5.	Above 1 year(adults)	8	16.00	3	6.00	5	10.00	16	10.67
What are the symptoms of ectoparasite (Tick; lice etc) infestation?									
6.	Hairless patches on the body	45	90.00	43	86.00	46	92.00	134	89.33
7.	severe prurities	40	80.00	42	84.00	43	86.00	125	83.33
Knowledge about feeding green fodder									
What is the appropriate quantity of green fodder to fed.									
1.Growing stock (6 - 12months) 1 - 2 kg		38	76.00	35	70.00	43	86.00	116	77.33
2.Adults goats (2 -3kg)		10	20.00	25	50.00	18	36.00	73	48.67
3. If fed adequately, adult goats can be maintained on good quality forage like jack leaves alone.		43	86.00	41	82.00	38	76.00	122	81.33
What are the crop by products that can be fed to goats.									
1.Plantain leaves		18	36.00	20	40.00	15	30.00	53	35.33
2.Witted tapioca leaves									
Leguminous fodder		6	12.00	9	18.00	12	24.00	27	18.00
3.cow pea		4	8.00	3	6.00	7	14.00	14	9.33
Knowledge about feeding concentrates									
What is the approximate quality of concentrate mixture to be fed to animals per day in kg.									

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Tab. No. – 35 cont.....

1. Good quality ready to feed compound cattle feeds are suitable for feeding adults goats.	13	26.00	3	6.00	8	16.00	24	16.00
2. Depending on the quality and quantity of fodder available concentrate allowance to goats can be reduced.	6	12.00	4	8.00	5	10.00	15	10.00
Name two oil cake that can be used to prepare a concentrate mixture								
1. Karanj cake	22	44.00	13	26.00	16	32.00	51	34.00
2. Mustard cake	16	32.00	18	36.00	19	38.00	53	35.33

Regarding disease control the Table-35 reveals that the respondents had knowledge about the identification of Goat pox by pock lesions on the udder (73-33%) and by lameness 83-33%). For control of Goat pox, hygienic milking practices is necessary was known to 10% respondent. Foot-rot was identified by lameness (69.33%) and by wound in between hooves 64.67%. Foot-rot was prevented by hygienic management of goat pen by (52%) and by trimming the hooves periodically (42%) respondents. Mastitis is identified by seeing swelling of the udder (90%) and by change in color consistency of milk 29.33%. To prevent mastitis by maintaining cleanliness of udder (45%), but none of the respondents knew about the advantage of scientific milking practices, The symptoms of H.S. as high fever and diarrhea were known to 12.67% and 25.33% of respondents respectively. Only 10.66% of respondents know the benefits of vaccination and only 1.33% respondents know about giving protection from diseases. The conditions occur after vaccination as

fever, swelling of vaccinated site and temporary drop in milk yield were known to none of the respondents.

From Table- 35 represents the knowledge regarding de-worming and control of ecto-parasites. Knowledge about the symptoms of worm infestation in goat as frequent diarrhea and stunted growth is known about of 90% and 70.67% of the total respondents respectively. 4.67%,4.67% and 10.67% respondent were having knowledge of the schedule of de-worming goats at first 3 months; 3months to 1 year and above 1 year (Adults) respectively. 89.33% & 83.33% respondents have knowledge about the symptoms of ecto-parasitic (Tick, lice etc) infestation by seeing hairless patches on the body and serve pruritis respectively.

Table – 35 shows that regarding knowledge about feeding green fodder, 73.33%,48.67% & 81.33% respondents were having knowledge about the approximate quantity of green fodder to be fed,1–2 kg to growing stock (6-12 months), 2–3 kg to adult goats and if fed adequately adult goats can be maintained on good quality forage like jack leaves alone respectively. 35.33%, 18% and 9.33% respondents were found has knowledge of feeding crop by products like plantain leaves, wilted tapioca leaves and leguminous fodder (cow pea) respectively.

With regards to knowledge about feeding concentrates, Table – 35 reveals; that there is no knowledge of the respondents about approximate quantity of concentrate mixture to be fed to animals per day to growing stock; adult goat and pregnant goats. But 16% respondent are having knowledge about good quality ready to feed compounded cattle feeds are suitable for feeding adult goats.

Depending on the quality and quantity of fodder available, concentrate allowance to goats can be reduced is known to 10% of pooled respondents. About 35% of the respondents are able to name two oil cakes that can be used to prepare a concentrate mixture.

Data pertaining to distribution of farmers on the basis of their knowledge level pertaining to improved goat farming practices are presented in Table –36.

Table-36: Distribution of respondents on the basis of overall Knowledge level

Sl No	Knowledge level	KANKE		ORMANJHI		RATU		Pooled	
		f	%	f	%	f	%	f	%
1	Low (0-15)	5	10.00	7	14.00	13	26.00	25	16.67
2	Medium (16-33)	45	90.00	43	86.00	37	74.00	125	83.33
3.	High (>33)	0	00.00	0	00.00	0	00.00	0	00.00
	Total	50	100.00	50	100.00	50	100.00	150	100.00

Data presented in Table-36 indicates that majority of respondents that is 83.33% have medium knowledge level (score 16-33) where as 16.67% respondents belong to low knowledge level (Score 0-15) whereas none of the respondents of the village belongs to high knowledge level (34 & above score).

The present finding is in line with that of Nataraju and Channegouda (1986) who reported that majority of dairy men had medium knowledge level regarding animal husbandry practices.

Zero order correlation coefficient (values) was calculated to ascertain the relationship between some of the selected socio-personal and socio-economic variables on the knowledge level of improved farming practices by the respondents of selected blocks of Ranchi. The

results are presented in Table-37 pin point that knowledge of improved goat farming practices was positively and significantly associated with their age, education, social participation, extension contact, mass media exposure, training orientation, socio economic status, herd size, income from goat, adoption level of improved goat rearing practices and income from goat at 5% level of significance.

Table-37: Relationship of socio-personal and socio-economic characteristics with knowledge level of respondents about improved goat farming

Sl. No.	Variables	Respondent
		R
1	Age	0.233*
2	Education	0.338 *
3	Income from goat	0.444 *
4	Family income	0.290 *
5	Mass media exposure	0.402*
6	Training orientation	0.452*
7	Socio economic status	0.379 *
8	Primary occupation	0.317*
9	Secondary occupation	0.127*
10	Extension contact	0.215 *
11	Social participation	0.273 *
12	Herd size	0.135*
13	Adoption level of improved goat rearing practices	0.317*
14	Land holding	0.059 NS
15	Type of family	0.133 NS
16	Size of family	-0.065 NS
* P<0.05 **<0.01 NS non significant		

However, a positive but non-significant relationship was observed with type of family and land holding. While a negative and non significant relationship was observed with size of family.

4.6 Constraints in Adoption of improved goat rearing practices

Goat is one of the most neglected domestic animal species in terms of technical knowledge and has been domesticated by poorest of poor farmers. After establishment of the All India coordinated research on goats in 1972, the real worth of goat as meat producing animal has been observed by scientist as well as the potential farmers. Since then, there have been tremendous improvements in scientific goat rearing practices.

Constraints were certain obstacles or problems experienced by goat farmers in adoption of improved goat rearing practices. Constraint experienced by the goat farmers were ascertained and are depicted in table- 37 with the ranking from first to seventeen.

High cost of concentrate mixture is major constraint (93.33%), inadequate extension & training facility (86.66 %), poor market infrastructure & poor knowledge of marketing (72%), high risk of inbreeding (70.67%) and high cost of modern medicine (68.67 %) were the serious constraints perceived by the owners.

Lack of knowledge on collection & utilization of manure (59.33%), charging exorbitant amount by veterinarian (57.33%), unawareness about the desirability of cross breeding with Beetal buck (53.33 %), high kid mortality (38.66%), inadequate health cover (34.66%), shortage of quality food & fodder (32%), non-availability of

improved goat (30%) and lack of management to face harsh weather(28%) were ranked vi, vii, viii, ix, x, xi, xii and xiii respectively.

Table-38: Distribution of respondents on the basis of constraints experienced by goat farmers

Sl. No.	Constraints perceived	Frequency	%	Rank
1	High cost of concentrate mixture	140	93.33	I
2	Inadequate extension & training facility	130	86.66	II
3	Poor market infrastructure & poor knowledge of marketing	108	72.00	III
4	High risk of inbreeding	106	70.67	VI
5	High cost of modern medicine	103	68.67	V
6	Collection & utilization of manure	89	59.33	VI
7	Charging exorbitant amount by veterinarian	86	57.33	VII
8	Unawareness about the desirability of cross breeding with beetal buck	80	53.33	VIII
9	High kid mortality	58	38.66	IX
10	Inadequate health cover	52	34.66	X
11	Shortage of quality food & fodder	48	32.00	XI
12	Non -availability of improved goat	45	30.00	XII
13	Lack of management to face harsh weather	42	28.00	XIII
14	Less attention of veterinary doctors	38	25.33	XIV
15	Danger of wild animal & predator	30	20.00	XV
16	Lack of loan facility	27	18.00	XVI
17	Lack of supervision & management	23	15.33	XVII

Less attention of veterinary doctors (25.33%), danger of wild animal & predator (20%), lack of loan facility (18%) and lack of

supervision & management (15.33%) were ranked xiv, xv, xvi and xvii respectively.

These were major constraints reported by goat farmers in and around of Ranchi district in adoption of improved goat rearing practices.

Present finding are in line with the finding reported by Pandey (1996), Podikunju *et.al.*(2001),Singh (2007), Patel *et.al.*(2009), Murai and Singh (2001),Kumar *et.al.* (2012) and Mahapatra *et.al.*(2012) who reported high price of constraint mixture, lack of knowledge about control of diseases, high cost of modern medicine, non-availability of modern medicine, non-availability of mineral mixture, non-availability of vaccine and veterinary medicine in government hospitals were some of the constraints faced by the respondents.



SUMMARY AND CONCLUSION

Goat in India has increased at a faster rate than that of other species of farm animals. In 1952, there were 47.0 million goats, which has risen now to 123.0 million (17.08 % of the world's goat population) making India number two in the world ranking and number one in goat milk production. Today India ranks first for its genetic resource and numerical superiority of goats in world. The world total goat population accounts 520.4 million. The current population of goat is about 24 million in Jharkhand. Comparative studies on economics of various farming systems under semi arid tract suggested that a small & landless labor should adopt goat farming to provide employment in regular source of income. The current study being a part of a broader study on livestock production systems was undertaken mainly to appraise the role of goats for small scale farmers including the landless rural population in predominant crop- livestock mixed farming systems operating in India. The goats

are reared mainly by poorest of the poor of the developing countries. The small and marginal farmers including landless agricultural laborers, mostly in non green revolution areas where irrigation facilities are poorly developed, prominently rear goats.

Keeping in view the importance of goat in the economic upliftment of poor tribal farmers of Jharkhand state and particularly in Ranchi district, the present study is planned to have an in-depth study of existing goat farming practices of goat farmers of Ranchi district and also to fill the gap between the existing practices with the recommendation scientific practices.

Under this background the present study entitled “**STUDY ON STATUS AND CONSTRAINTS OF GOAT REARING IN AND AROUND OF RANCHI DISTRICT**” was carried out with following objectives:

1. To study the socio-personal and socio-economic characteristics of respondent.
2. To study the existing goat farming practices of goat farmer viz. breeding, feeding, management & disease control.
3. To study the knowledge level of farmers about improved goat farming practices.
4. To study the adoption of improved goat farming practices.
5. Constraints experienced by farmers in goat farming.
6. To study the relationship between socio-personal and socioeconomic variables with adoption & knowledge by the respondent.

The present study was carried out in purposively selected Ranchi district of Jharkhand. Since, the study was running in three blocks viz. Kanke, Ormanjhi, and Ratu blocks. These blocks were

purposely selected. The study was undergoing in fifteen villages (5 villages each in Kanke, Ormanjhi, and Ratu block) of Ranchi district. All the villages selected for the study from each block were selected randomly. Ten respondents were selected randomly from each village. Thus, the total 150 respondents were selected randomly for the study.

The data was collected personally through a well structured and presented interview schedule supported with personal observation and pilot study. The data thus collected was compiled, tabulated and subjected to the statistical analysis viz., frequency, percentage, t-test, correlation coefficient were used for proper interpretation of data.

The salient findings of the study has been summarized and presented as follows :

1. Majority of the goat owners were middle aged (53%), female (58.67%), belonging to general category (50.67%), illiterate (57.33%), having nuclear type (72.67%) and possessing small sized family (66%). Most of them has no social participation (60.67%) & extension contact (69.33%). Most of them has low level of mass media exposure (88.67%) and training orientation (84.67%).
2. With regard to economic characteristics, majority of them having marginal landholding (54.67) having labour as primary (62%) & livestock rearing as secondary occupation (68%) with small herd size and medium economic status with monthly family income Rs. 1406.

3. Most of the respondent mated their doe with local buck & opined winter as best season for kidding. Majority of them can identify goat in heat.
4. All respondent let loose their goat for grazing. 36.67% respondent were feeding tree leaves & 96% respondent were not feeding concentrate mix. All of them were feeding colostrums to new born kids & allowing kids for grazing at the age of 2-3 month.
5. Most of the respondents treat their animals by self indigenously (44.67%). 12% of the respondent were vaccinating their goat. For control of ectoparasites gandhak heated in karanj oil were used by 60.67% respondents.
6. Most of them were not cleaning their utensils (94.67%). Castration of male kid was followed all by indigenous method at the age of about 2 month (75.33%). Most of them provide bedding to the kid (98%). Placenta was disposed by burying it & majority of them kept their goat in shed (90.67%).
7. Level of adoption & knowledge of goat farmer about improved goat rearing practices was found to be low (94%) & medium (83.33%).
8. Different component of the existing goat rearing practices showed marked result. Majority of the respondent (80%) followed natural service with local buck as breeding method, (89.33%) followed winter as best season for kidding, only 4% had feeding concentrate mixture. Overall knowledge level of goat rearing respondents regarding improved goat rearing was found to be medium (83.33%).

9. Knowledge of improved goat farming practices was positively and significantly associated their age, education, social participation, extension contact, mass media exposure, training orientation, socio economic status, herd size, income from goat, adoption level of improved goat rearing practices and income from goat at 5% level of significance. However, a positive but non-significant relationship was observed with type of family and land holding. While a negative and non significant relationship was observed with size of family.
10. Adoption of improved goat farming practices was positively and significantly associated their age, education, social participation, extension contact, mass media exposure, training orientation, socio economic status, herd size, income from goat, knowledge level of improved goat rearing practices and income from goat at 5% level of significance. However, a positive but non-significant relationship was observed with type of family, size of family and land holding.
11. High cost of concentrate mixture (93.33%), inadequate extension training facility (86.66%) and Poor market infrastructure & poor knowledge of marketing (72%) were major constraints perceived by goat rearing respondent in adoption of improved goat rearing practices.

Conclusion

1. From the present findings of the study, it can be concluded that there is an urgent need that the extension agencies should make regular visit to villages for educating the farmers about scientific goat rearing practices.

2. There is also urgent requirement to form need based organization such as goat co-operative and farmers self help group.
3. Up-gradation of local doe with Beetal buck has been recommended by culling all the local buck.
4. Improvement of vaccination, deworming and medical facility is needed.

IMPLICATIONS

Based on the findings of the present work, following implications could be inferred

1. Analysis of socio-personal characteristics of respondents has indicated that the education level of respondents was low. Thus, there is an urgent need to motivate the respondents to get educated and for this the voluntary organizations must come forward to educate them besides imparting vocational training keeping their cultural heritage alive.
2. Results of the study further show that extension contact was low in the study area. Therefore, there is an urgent need that the extension agencies should make regular visit to the villages for motivating about scientific goat rearing practices.
3. The results revealed that there was non-significant difference between respondents for adoption of improved goat husbandry practices could be attributed to the fact that no concerted attempt was made by the project on popularizing goat husbandry practices. So, there is an urgent need to draw attention of Policy makers, Government of Jharkhand and

BAU towards the promotion of goat husbandry practices in villages

4. Scientific line of treatment among animals should be carried out in the study area, for that more technical personnel should be appointed to cover the respective area with the necessary provision of medicines, vaccines and other inputs.
5. Economic analysis indicated that the overall average monthly income was found to be about Rs.1400. Efforts must be taken to increase the overall average monthly income of villages.

FUTURE RESEARCH SUGGESTIONS:

The findings and experiences of the present study open the gateway to the horizon of new research endeavour. Some of the further research possibilities could be as follows:

1. The present study was undertaken in only one district viz. Ranchi of Jharkhand state. Its scope and content would be widened if similar studies are conducted in other areas of Jharkhand and country.
2. A deep probe, from anthropological angle can be targeted to study the place of goat farming in culture and economy of farmers of Ranchi district.
3. An indepth study of employment and income pattern of farmers in Ranchi district of Jharkhand.
4. A full-fledged study to develop a suitable communication strategy to bring psychological change specially in knowledge and adoption of goat farmers.



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Picture 1: Goat rearing at Hocher village



Picture 2: Goat rearing at Boreya village

M



Picture 3: Goats drinking rice-water at Murum village



Picture 4: Goat rearing at Batta village



Picture 5: Goat rearing at Kumharia village



Picture 6: Goat feeding at Kuchu village



Picture 7: Goat rearing at Kulhu village



Picture 8: Indigenous method of castration of goat at Gangutola village



Picture 9: Use dung ash for control of ectoparasite at Dahubartoli village



Picture 10 : Goat returning after grazing at Kuchu village



Picture 11: Goat in shed at Amtard village



Picture 12: Goat grazing at Khanga village



Picture 13: Feeding of tree leaves by cut-carry method at Kathitard village



Picture 14: Goat rearing at Jhakhratoli village



Picture 15: Goat grazing at Makhmundo village



Picture 16: Researcher with goat farmers in Gangutola village

APPENDICES

STUDY ON STATUS AND CONSTRAINTS OF GOAT REARING IN AND AROUND OF RANCHI DISTRICT

M.V. Sc. Scholar: Dr. Neha Kumari

Advisor: Dr. J. Oraon

INTERVIEW SCHEDULE

Birsa Agricultural Uni.

Respondent no.:

Faculty of Vety. Sci. & A. H.

Date of interview:

Department of A.H. Extension

Interviewer:

M.V.Sc. Research Programme

Checked by :

Date :

1. Socio-personal and economic characteristics of respondents

1.1 State:

District:

Block:

1.2 Name of respondent:

1.3 Father's name:

1.4 Village

1.5 Sex: M/F

Age :

Young (18-30years):

Middle (31-50 years):

Old (51 and above):

1.6 Caste /Tribe /Community: General

SC

ST

1.7 Education

Category

Score

Illiterate

1

Upto primary level

2

Upto middle level

3

Upto high school level

4

Upto intermediate level

5

Graduate & above

6

1.8 Type of family:

Nuclear : (1)
 Joint : (2)

1.9 Size of family:

Small (upto 5 members) (1)
 Medium (6 to 9 members) (2)
 Large (above 9 members) (3)

1.10 Social participation

No participation (1)
 Member of one organization (2)
 More than one (3)

1.11 a. Extention contact:

Please indicate the frequency with which you meet the following extension personal:

Sl. No.	Extension agency	Frequency of meeting			
		Weekly (3)	Once in month (2)	Ocassinonally (1)	Never (0)
1	Village extension officer				
2	Agricultural officer A.H. officer/Stock man				
3	Youth club members				
4	NGO				
5	Programme official				
6	Others (specify)				

High (Monthly) (4)
 Medium (six monthly) (3)
 Low (Yearly) (2)
 No contact (1)

1.11 b. Mass-media exposure

Sl. No.	Source	Frequency			
		Frequently (3)	Often (2)	Seldom (1)	Never (0)
1	Newspaper				
2	Radio				
3	T.V.				
4	Farm magazine				
5	Kisan mela				
6	Livestock show				
7	Other(specify)				

1.12 Occupation

Primary

Secondary

1.13 Land holding

Landless

Marginal

Small

Medium

Large

No land

(0.1 -2.5 acres)

(2.6 -5.0acres)

(5.1 -10.0 acres)

(10.1 acres and above)

1.14 Livestock

Traditional

Improved

Total

- a. Cow
- b. Buffaloes
- c. Bull
- d. Bullock
- e. Calves
- f. Sheep
- g. Pig
- h. Poultry
- i. Ducks
- j. Others.

1.15 Goat population	Traditional	Improved	Total
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Buck

Doe

Kids

1.16 Socio – economic status:

Land -10 point /hectare

Livestock

Draught cattle -4 point per pair

Milch cattle -3 point per head

Young stock -1.5 point per head

Goat -1 point per head

Pig -1 point per head

Sheep -1 point per head

Implement s-1 point per head

Cycle, Radio, Sewing machine -2 point each

Pucca house -3 points

Kuccha house -1 point

Mixed house-2 points

Total:

1.17 Family income:

- a) Income less than Rs. 1000 per month
- b) Income between Rs.1000-2000 per month
- c) Income between Rs.2000-3000 per month
- d) Income between Rs 3000-4000 per month
- e) Income above Rs.4000 per month

2. Goat farming practices followed by farmers

a) Breeding

1. Natural servies
2. A.I. (cross breeding)
3. Identify animals in heat
 - a. Yes
 - b. No

4. Best season for kidding

- a. Winter
- b. Rainy
- c. Summer

b) Feeding

- 1) Feeding green leaves etc
(cut and carry method)
- 2) Let loose for grazing
- 3) Feeding dry fodder
(wheat bhussa)
- 4) Feeding mineral mixture
- 5) Colostrum feeding to new born kids
- 6) Let loose kids for grazing at age :
 2-3 months
 3-4 month
 4-5 month

c) Disease control

- 1) Treating animals indigenously
 - a) Self
 - b) By Bhagat
- 2) Treating animals at veterinary hospital (by veterinarian)
- 3) Vaccination against contagious diseases
- 4) Deworming
- 5) Disposal of placenta
 - a) Burial
 - b) Burnt
 - c) Hanged on trees

d) Management

- 1) Providing water to kids
 - a. Yes
 - b. No
- 2) Housing
 - a. Loose/open
 - b. Closed/shed
- 3) Sanitation
 - a. Control of ectoparasite
 - b. Cleaning of utensils

4. Providing bedding to kids

- a. Yes
- b. No

5. Castration of male kids

- a. Yes
- b. No

6. Age of castration

- a. 1-2 month
- b. 2-3 month
- c. 3-4 month

7. Method of castration

- a. Indigenous
- b. Burdizzo

Adoption of improved goat rearing

Sr. No.	Particulars	(A)	(NA)
1.	Colostrum feeding to new born kids within 30 minutes		
2.	Castration of young male within two months of age.		
3.	Castration of young male within two months of age.		
4.	Spraying of sheds with any disinfectants.		
5.	Deworming of kid		
6.	Supplement feeding with concentrate mixture besides 4-5 hrs. grazing		
7.	Prevention of pregnant doe from grazing during last 15 days and provision of extra ration.		
8.	Dipping at every 3 months		

Knowledge about improved goat rearing practices

A. Knowledge about breeding practices

	Correct	Incorrect
What are the sign of heat in a doe		
1. Swollen	(1)	(0)
2. Mucus discharge from vagina	(1)	(0)
3. What is the duration of heat period?	14-18hours	(1)
	Any other	(0)
4. What is the most appropriate time of detection of heat ?	Morning	(1)
	Anyother	(0)
5. After how many days the doe repeats its heat cycle	18-21	(1)
	Anyother	(0)
6. What is the age at the first mating of a doe?	8-12 days	(1)
7. What are the region for a doe not coming to heat over after puberty ?		
a. Nutritional deficiency	(1)	(0)
b. Reproductive disorders	(1)	(0)
8. While selecting a breeding buck it should be		
a. Masculine	(1)	(0)
b. Posses good libido	(1)	(0)
c. Free from disease	(1)	(0)

B. Knowledge about Goat pox, foot rot, Mastitis, H.S. and their control

How would you identify goat pox?

1. Pock lesion on udder	(1)	(0)
2. Lameness	(1)	(0)

How would you control Goat-pox?

3. Hygienic milking practices	(1)	(0)
-------------------------------	-----	-----

How would you identify foot rot?

4. Lameness	(1)	(0)
5. Wound in between hooves	(1)	(0)

	Correct	Incorrect
6. Hygienic management of goat pen	(1)	(0)
7. Trimming the hoofs periodically	(1)	(0)
How would identify Mastitis?		
8. Swelling of udder	(1)	(0)

9. Change in colour and consistency of milk	(1)	(0)
10. Maintaining cleanliness to udder	(1)	(0)
How would you prevent Mastitis?		
10. Maintaining cleanliness of udder	(1)	(0)
11. Scientific milking practices	(1)	(0)
What are the symptoms of H.S.?		
12. High fever	(1)	(0)
13. Diarrhoea	(1)	(0)
How can you control H.S.?		
14. By vaccination	(1)	(0)
15. Vaccinating Goat is a measure of giving protection from disease	(1)	(0)
Can following condition occur after vaccination?		
16. Fever	Yes	(1)
	No	(0)
17. Swelling of vaccinated site	Yes	(1)
	No	(0)
18. Temporary drop in milkyield	Yes	(1)
	No	(0)

Knowledge about de-worming and control of ecto-parasites

	Correct	Incorrect
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What are the symptoms and worm infestation in goats?

1. Frequent diarrhea	(1)	(0)
2. Stunted growth	(1)	(0)

What is the schedule of deworming goats

3. First 3 month	Monthly interval	(1)
	Any other	(0)
4. 3 month to 1 year	Every 3 month	(1)
	Any other	(0)
5. Above 1 year (Adults)	Yearly interval	(1)
	Any other	(0)

What are the symptoms of ecto-parasite (Tick, Lice etc) infestation

6. Hairless patches on the body	(1)	(0)
7. Severe pruritis	(1)	(0)

D. Knowledge about feeding Green fodder

What is the approximate quantity of green fodder to be fed

1. Growing stock(6-12 months)	1-2kg	(1)
-------------------------------	-------	-----

	Any other	(0)
2. Adult goats	2-3kg	(1)
	Any other	(0)
1. If fed adequately adult goat can be maintained on good quality forage like jack leaves alone	Yes	(1)
	No	(0)
What are the crop by -product that can be fed to goats		
4. Plantain leaves	(1)	(0)
5. Wilted tapioca leaves Leguminous fodder	(1)	(0)
6. Cow pea	(1)	(0)

E. Knowledge about feeding concentrates

What is the approximate quantity of concentrate mixture to be feed to animals per day in kg

1. Growing stock (6-12 month)	300-400 gms	(1)
	Any other	(0)
2. Adult goats	200-300gms	(1)
	Any other	(0)
3. Pregnant goats (4 th and 5 th month)	300-500gms	(1)
	Any other	(0)
4. Milch goats	200-300gms +40% milkyield	(1)
	Any other	(0)
5. Good quality ready to feed compounded cattlefeeds suitable for feeding adult goats	True	(1)
	False	(0)
6. Depending on the quality and quantity of Fodder available concentrate allowance to goats can be reduced	True	(1)
	False	(0)

Name two oilcakes that can be used to prepare a concentrate mixture

7. Ans :	(1)	(0)
8. Ans :	(1)	(0)

Constraints of goat farming

Sl. No.	Constraint perceived	(1)	(0)
1.	High cost of conc. mixture		
2.	Inadequate extension & training facility		

3.	Poor market infrastructure & poor knowledge of marketing		
4.	High risk of inbreeding		
5.	High cost of modern medicine		
6.	Collection & utilization of manure		
7.	Charging exorbital amount by veterinarian		
8.	Unawareness about the desirability of cross breeding with beetal buck		
9.	High kid mortality		
10.	Inadequate health cover		
11.	Shortage of quality food & fodder		
12.	Non -availability of improved goat		
13.	Lack of management to face harsh weather		
14.	Less attention of veterinary doctors		
15.	Danger of wild animal & predator		
16.	Lack of loan facility		
17.	Lack of supervision & management		

Signature of the interviewer